THE REFLECTION OF PATTERNS OF ATTACHMENT IN INFANCY IN NARRATIVES OF PRESCHOOL CHILDREN

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ABSTRACT

This series of studies reports on the prospective and concurrent relation of attachment to a narrative based assessment of the five year old child's internal world. It relies on the exploration of a relatively new research measure designed to explore the internal world of the young child. No published studies have yet investigated the validity of this measure in relation to thoroughly tested measures of attachment patterns in infants and parents. Additionally, this study will investigate the independent contributions of mother and father.

The first two chapters review the literature and introduce the instruments to be used. The initial chapter examines the theoretical points of view regarding the internal world and mental representations from the perspective of psychoanalytic, cognitive and attachment theory. It then discusses the move to a level of representation in attachment research that has made the current study possible. Chapter Two considers the history of the technique of doll play as a research tool and examines the scant research that has been published using the MacArthur Story Stem Battery.

Chapter Three responds to a need for psychometric information regarding the MacArthur Story Stem Battery and the corresponding MacArthur Narrative Coding System by reporting on the construction of reliable and valid factors/scales. Subsequent chapters present these scales associations to demographic variables collected before the birth and during the infancy of the target children. Later chapters report on the longitudinal and concurrent associations between the scales with categories of infant-parent, child-parent and parental representations of attachment security and with parental assessments of child problem behaviours utilizing the reliable and validated Child Behaviour Checklist (CBCL). In addition, an attempt is made to construct theoretical profiles of secure and insecure children's responses to the story stem battery and to apply these profiles to the four groups of attachment patterns in the sample.

The discussion focuses upon the creation of psychometrically valid scales relevant to important aspects of the child's internal world. It also concentrates upon discussing the confirmed and unconfirmed results of the application of these scales to this low-risk, non-clinical sample of the London Parent-Child Project.

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1.1 THE REPRESENTATIONAL WORLD

Central to this study are the theoretical concepts of an individual`s internal world and its representations. What do we mean when we refer to the 'representational world of the child' ? What do mean by internalisation` and `representations' ? In order to begin thinking about these complex ideas this chapter will review some of the literature about representations and the internal world from both a psychoanalytic and a cognitive theory perspective. It is important to consider both of these perspectives as they will lead us to another theoretical construct which is an important aspect of this project. That is, attachment theory's construct of the internal working model.

1.1.1 A Psychoanalytic Approach

In the early writings of Freud (1895) the term representation identifies the product of internalization, that is, the creation of an internal mental world separate from external reality. This creation of an internal mental world allows us to give meaning to our own experiences. We usually speak of internalisation when an intersubjective relationship is transformed into an intra subjective one. A psychic representation is a more or less consistent reproduction within the mind of a perception of a meaningful thing or object. As a baby grows he or she begins to experience an awareness between inner and outer and self and non-self. Memory traces of these perceptions delineating self from non-self are laid down and, with maturation and development, nuclei of these self and object

representations are elaborated. With further development psychic representations become more complex and unique. Many aspects of the psycho-physiological self find representation in the psychic representation of the self. Similarly, all aspects of objects, animate and inanimate, that are important to the individual find psychic representation as part of that person's representational world, an inner world of objects (Moore & Fine, 1990). It is through affectively invested interactions with the environment, and memories of these, that the infant builds mental representations of himself, the other and their interaction (Tyson & Tyson, 1990).

Freud's focus was primarily on the product of internalisation and his explanation for how such a mental phenomenon may actually come about was subjected to extensive revision. His early (1915) drive theory account for the development of mental representations begins with the earliest mother-infant relationship and holds that the bond which links mother to infant is libido. Infants come to love and represent mother based on her ability to gratify their instinctual needs thereby discharging libido and reducing anxiety. Later (1926), Freud modified this view and considered mother's presence or absence as the critical factor in the reduction of anxiety as well as in the development of self and object representations.

One of the main ideas throughout Freud's theoretical constructions was undoubtedly expressed by the hypothesis that any relation experienced both on the conscious and unconscious level with one's own parents during infancy will have a decisive influence on the quality of a child's mental representations of those relationships as well as the development of the child's personality.

In his paper On Narcissism: An Introduction (1914), Freud deals with parental roles during this intergenerational process, focusing on the parental "compulsion to ascribe every perfection to the child" and the parental hope that "the child shall fulfil those wishful dreams of the parents which they never carried out" (p.91). In a later essay, Group Psychology and the Analysis of the Ego (1921), Freud shows the other aspect of this process, wherein he considers the mechanism of identification by the child, which represents "the earliest expression of an emotional tie with another person" (p.105). Freud believed that a transformation in internal mental structuring and representation takes place through identification, a process he also linked to the psychological awareness of self as separate from loved objects, i.e., one's caregiving parents.

In The New Introductory Lectures on Psychoanalysis (1933), Freud elaborated on the mechanism by which such transformation may occur. "If one has lost an object or has been obliged to give it up (as children must eventually give up or separate from their parents), one often compensates oneself by identifying oneself with it and by setting it up once more in the ego... (p.527)." In this statement Freud foreshadows what will eventually become a major area of current developmental research: how mental representations of ones' parents and the relationships with those parents are transmitted or passed on to succeeding generations.

Contemporary psychoanalysis

Contemporary psychoanalytic theories are characterised by a shift in the conceptualisation of the unconscious from a repository of repressed instinctual wishes to a structure comprising representations of self, object and of prototypic interactions between the two (Eagle, 1995). The interest in representational structures that evolve from the process of internalisation is also an expression of a shift in interests in psychoanalysis from a one person psychology to a two person psychology focused on the quality of early fundamental caring experiences (Blatt, 1995).

Psychoanalysts from the independent group are likely to hold the classical view of the importance of body functioning and of drives arising from it. But they also often assign equal motivational strength to desires for and about objects, both in the form of external things and people and as internal structures and their associated phantasies (Rayner, 1991). One independent psychoanalyst, Fairbairn, felt that the origins of much pathology lay in real external object relations. These are often seen as arising from various forms of loss of intimacy with parents - particularly with mother. When working well, such early intimacy seems likely to have its own special form or 'emotional patterning of delight' and loss of the assurance of such an experience constitutes a trauma. Traumata may also arise from distortions of reality and from overstimulation. Fairbairn believed that the individual thenceforth searches, in one way or another, for his lost intimacy or its substitutes. In this way he sees the human being as 'object-seeking' rather than simply pleasure-seeking. By this he means that pleasure is gained by the quality of the state of an ego-object relation - internal or external - rather than a discharge of energy.

Likewise anxiety is reduced by a change in object relation rather in discharge of energy (Rayner, 1991). Although Fairbairn includes infant experiences in his account of object relations he did not base his theorising on actual infant observations (Bretherton, 1987).

In psychoanalytic object relations theory, self- and object-representations are considered as multi-dimensional and complex, and the emergence of any particular representational configuration reflects a synthesis of the imperatives of the external and internal worlds (Sandler and Rosenblatt, 1962). Sandler and Rosenblatt (1962) draw a distinction between the 'inner world' and the 'representational world' stating that the inner world is a vaguer concept than that of the 'representational world'. They were guided by a need to conceptualise and categorise child clinical material from a developmental perspective. In what is now considered a classic work, they state that the term representation actually implies two separate concepts: first, a stable psychic organization which serves as an experiential map, collecting and integrating all of the mental images and relational dispositions between the self and others; and, second, the contents and the cognitive-affective characteristics of those images and dispositions which reside within each personal experience. The construction of the representational world is the product of ego functions.

Representations are seen to have an enduring existence as an organisation that is constructed out of a range of many impressions or images that come about gradually with maturation and experience. The representational world contains these representations but also more; sensations arising from the child's own body in its interaction with the

environment result in the formation of a body representation. The representational world is compared to a stage set within a theatre where the characters represent the child's various objects as well as the child him or herself. The self-representation is seen as the organisation which represents the person the child has consciously and unconsciously perceived him or herself to be.

Another important aspect of Sandler and Rosenblatt's formulation of the representational world is that of the shape of self- or object-representations. By this it is meant that the character and form of a particular representation or image is denoted at any one moment. For example, the child who feels angry at one moment, and is the subject of attack at another, shows a change of shape in his self-representation. This may be either conscious or unconscious. In this model, identification becomes a modification of the self-representation on the basis of another object representation as a model and enduring identifications would be seen as organised changes in the self-representation.

Hans Loewald maintains yet revises Freud's structural model in a way which embraces developmental and relational perspectives (Kaywin, 1993). Loewald is important for this discussion because one of his basic principles regards the concept of internalisation (Fogel,1989). For him, internalisation is the organising activity that is the very essence of, that defines and constructs, the human mind. It is a growth principle and an inherent developmental tendency. He believes the basic way of functioning of the mind is internalisation, is to generate representations as the central aspect of its instinctual activities. Internalisation is a given for Loewald and revealed only by its

manifestations. The process of internalisation is represented by the concept of the coherent ego. The ego is characterised by the internalisation process yet is also the product of that same process.

Loewald adds a unique perspective to ego development; that is, that id and reality are psychological constructions which, along with the ego, develop over time. In Loewald's conception of development, the early preoedipal period is the phase when psychic structures of id, ego and reality are beginning to develop out of an original primary narcissism. Regarding the id as a psychological construction which develops, Loewald (1978) says, "Understood as psychic phenomena or representatives, instincts come into being in the early organising mother-infant interactions. They form the most primitive level of human mentation and motivation. In their totality, and as mental life progresses toward more complex organisation of different levels of mentation and interplay between them, instincts constitute the id as distinguishable from the ego or superego" (p. 495).

What this means is that the instinctual drives themselves are not simply biological-constitutional givens; rather, they are forged in early interaction with the environment (Kaywin, 1993). And, rather than defining instinctual drives as the mental representations of biological strivings as Freud did, Loewald defines them as primitive mentation which must develop and become organised in some fashion before it is appropriate to refer to the presence of a psychological structure called the id. Instinctual drives are now to be understood as psychological constructions that develop over time in interaction with the environment. Loewald has preserved a drive theory while he

revises the model to infuse it with a relational and developmental perspective (Kaywin, 1993; Fogel,1989). Drives are psychological, representational - the products of differentiation.

As stated Loewald believes that the differentiated psychic structure of id, ego and reality must subsequently develop out of an undifferentiated state in which self and object are fused. In contrast to Freud's view of reality, Loewald gives full psychological status to reality. Reality also is understood as a psychological construction that develops over time from early subjective forms to later more objective forms (Kaywin, 1993). He rejects the view that there is an inherent antagonism between drives (ego,organism) and environment (parents,civilisation). Drives, ego and objects are created by the mind out of original unity in a context of human relationships. Full internalisation, full integration is a potentially realizable ideal - the recovery of original unity as a goal of healthy development.

1.1.2 A Cognitive Approach

Cognitive science may be defined as a contemporary, empirically based effort to answer long-standing epistemological questions - particularly those efforts to explain human knowledge. Of the various features generally associated with cognitive scientific efforts exploring human cognitive activities there is the belief that it is necessary to talk

about mental representations and to posit a level of analysis wholly separate from the biological or neurological, on the one hand, and the sociological or cultural on the other (Gardner, 1987).

Cognitive science has also made the deliberate decision to de-emphasize certain factors which may be important for cognitive functioning but whose inclusion would complicate the cognitive-scientific enterprise. "These factors include the influence of affective factors or emotions, the contribution of historical and cultural factors, and the role of the background context in which particular actions or thoughts occur (Gardner, 1987, p.6)".

The cognitive scientist rests his discipline on the assumption that human cognitive activity must be described in terms of symbols, schemas, images, ideas and other forms of mental representations. It is believed legitimate and necessary to posit a separate level of analysis which can be called the 'level of representation'. When working at this level the scientist deals in the representational entities mentioned, that is, symbols, rules, images, and explores the ways in which these representational entities are joined, transformed or contrasted with one another. Much contemporary theoretical talk among cognitive scientists amounts to a discussion of the best ways of conceptualizing mental representations. Some favour the view that there is but a single form of mental representation, usually one that features propositions, while some believe in at least two forms of mental representation - one more like a picture or image and the other closer to propositions. One cognitive scientist (Johnson-Laird) prefers to posit at least three types of mental representation: propositional representations: mental models which are

structural analogues of the world: and images that are the perceptual correlates of models (Gardner, 1987).

Based on observations of his own children, Jean Piaget's (1972) theory of development centres on children's cognition and sensori-motor capacities. A child comes to know or understand a rattle or other toy by acting on it, physically and mentally. Rather than passively taking in information, Piaget believed that children have an active part in the process of knowing; they actively select and interpret information in their environment. In this way, children's knowledge of the world changes as their cognitive system develops. For Piaget, the essence of cognitive development is structural change which gives meaning to and influences change in the content of thought as well as its representations - the mental form in which information and knowledge is cast. One of the most important changes in the structure of mental representations and representational processes is the advent of symbolic thought - the culminating achievement of cognitive development in the infant. The ability to mentally represent one object or concept for another provides the basis for fantasy play and the acquisition of language which, in turn, leads to greater cognitive development. Language and fantasy play also become the means by which researchers and analysts can decipher and begin to understand the contents of children's thoughts and representations.

One particular type of mental representation of special interest to developmentalists is scripts. These were conceived of by information-processing psychologists studying adults. In the best known formulation, Schank introduced the notion of a script - a canonical set of events one can expect in an often encountered

setting such as a meal at a restaurant (Gardner, 1985). Such a structured framework allows the 'understander' to deal efficiently with a variety of otherwise difficult to assimilate texts. In other words, scripts are generalized, coherent mental representations of a series of events that occur in a consistent temporal order in every day life. They describe 'what's supposed to happen' in certain situations. According to Nelson (1978), three features of scripts are noteworthy. First, both verbal and non-verbal representations of self, objects and events are likely to form scripts which are established very early in life. Second, the script approach seems to correspond most closely to the way in which children represent complex events of their day-to-day lives. That is, rather than a static 'picture', scripts consist of something closer to an 'event schema' (e.g.,Mandler, 1983). Thirdly, because the approach is applicable to the social and emotional world of self, objects, events and their integrating interactions and relationships, it is particularly appealing to the developmental researchers.

Although both attempt to do so, neither cognitive theory, which focuses on 'rational' thought processes nor psychoanalytic theory, which tends to focus on 'irrational' or unconscious thought processes, present a complete picture of how children's minds and personalities develop. However, the shortcomings of one theory may actually be remedied by the strengths of the other. The role of external reality in cognitive theory can inform or compliment the role of internal fantasy in psychoanalytic theory and vice versa.

1.2 ATTACHMENT THEORY AND THE INTERNAL WORKING MODEL

The ideas contained within the joint work of John Bowlby and Mary Ainsworth known as attachment theory are also central to this project. Drawing on concepts from ethology, cybernetics, information processing, developmental psychology and psychoanalysis John Bowlby formulated the basic tenets of the theory (Bretherton, 1995; Eagle, 1995; Grossman, 1995).

Like other psychoanalysts, John Bowlby (1973) was greatly concerned with the relationship between outer reality and inner world. In many ways, his theories can be seen as a bridge joining the complimentary aspects of psychoanalytic and cognitive psychology points of view as examined above; that is, that Bowlby's concept of 'internal working models' can be seen as a link between an individual's inner world and his or her outer reality. The emphasis on unconscious representations is most clearly expressed in the centrality of the concept of internal working models (Eagle, 1995).

In reacting against central aspects of classical Freudian theory, both attachment theory and contemporary psychoanalysis (e.g., object relations theory) end up sharing basic assumptions (Eagle, 1995). For example, they both reject the idea that the infant's attachment to mother is secondary to the latter's role in gratification of the infant's hunger drive and that the vicissitudes of the sexual drive are primary determinants of personality development. They share the views that infant-mother attachment is an autonomous

motivational system rather than one subservient to other instinctual drives and that personality is shaped by early attachment experiences.

Of particular significance to developmental researchers is Bowlby's suggestion that the construction of internal working models of self and attachment figures is a natural consequence of the human ability to make sense of the world through the construction of mental representations. Through continual transactions with the world of persons and objects, the child constructs increasingly complex internal working models of the world and of the significant persons in it, including the self (Bowlby, 1973; Bretherton, 1995b). The representational dimension of attachment theory is based on the assumption that the pattern of caring relationships increasingly become a central cognitive-affective structure of the child through the internalisation of early parent-child interactions. These 'internal working models' of caring experiences organize and influence subsequent personality development and interpersonal relations throughout the life cycle (Blatt, 1995).

Bowlby suggested that within an individual's working model or representation of the world, working models of the self and of principal caregiving figures are of special significance. Infants develop 'internal working models' based on the history of interactions with their primary caregivers. They not only 'represent' the nature of the past interactional experience, but they also permit the forecasting of future experience and become the prototype of future relationships. That internal working models represent past interactional experience and become the prototype for the formation of future relationships make them the mechanisms of transference (Slade &Aber, 1992).

Ordinarily, internal working models have an adaptive function of providing an adequate representation of self, attachment figures and environment. This means that the development of healthy attachment relationships is based on the continual up-dating and fine-tuning of the internal working models. The metaphor of the 'internal working model' of the self and attachment figure underscores the dynamic and functional aspects of representations (Bretherton, Ridgeway & Cassidy, 1990). In infancy, the child's internal working models of self and attachment figure develop in a complementary fashion and initially centre around maternal availability. Caregivers who are able to read their infant's cues and to respond sensitively are increasingly 'represented' by their infants as available. In contrast, caretakers who tend to reject their infant's bids for attachment or who respond to them insensitively are increasingly represented as 'unavailable' to provide protection or security. At the same time as these representations are being formed, the infant creates complementary representations of the self as powerful or powerless to gain a sense of security or ' felt security' and eventually as worthy or unworthy of protection and care (Slade & Aber, 1992).

Internal working models need not be fully accurate nor detailed to be useful but to fulfil their functional role it is important that they be consistent with the reality they represent (Bretherton, 1987). Under some circumstances defensive processes may hinder the adaptive accommodation of internal working models. Defensive exclusion is believed to occur in response to intolerable mental pain or conflict. Clinical case material suggests that such conflict arises when an attachment figure habitually ridicules a child's security-seeking behaviours or disavows or denies the child's anxious, angry or loving feelings towards the attachment figure. Under these circumstances a child would defensively

exclude from awareness the working model of the 'bad' parent and retain conscious access to the model of the 'good' loving parent. As the internal working model of the unconditionally loving parent does not correspond to reality such an idealized model is maladaptive. Although the defensive processes might bring relief from psychic pain, inadequate working models will interfere with effective coping and with optimal development (Bretherton, 1987; Bretherton, Ridgeway & Cassidy, 1990).

The biological 'set goal' of the infant attachment behavioural system was originally conceived by Bowlby as physical proximity to the parent in order to ensure protection and survival. Later, the psychological set goal of 'felt security' was added to make the concept relevant to attachment behaviours beyond infancy. Thus when the infant is feeling safe and secure, by virtue of proximity to mother, or familiarity with the environment, the attachment behavioural system or the need to signal mother to comfort or provide safety is deactivated. By contrast when the child feels in need of comfort, because of mother's distance from him or her or the perception of danger from the environment, the attachment system will be activated. When a critical level of felt security has been achieved, the system is deactivated (Slade and Aber, 1992). Bowlby saw the parent role of secure base as pertaining to children's exploration of their inner, not just their outer world (Bretherton, 1995c). Research indicates that insecure attachment results either in a preoccupation with relatedness (anxious ambivalent attachment) or in an exaggerated and distorted emphasis on separation (avoidant insecure attachment) (Blatt, 1995).

The next section will describe a well-established empirical method for assessing quality of attachment in infants that was used in the first phase of this study (to be described in Chapter 2).

1.2.1 Assessment of attachment in infants

The Strange Situation

Originally employed in 1970, the Ainsworth Strange Situation (Ainsworth, Blehar, Waters & Wall, 1978) has been established as a reliable and valid empirical instrument with which to assess the quality of infant-mother (and infant-father) attachments. Based on conclusions drawn from prolonged observations of mothers and infants in the home, Ainsworth reasoned that differences in maternal sensitivity to infant cues during the first year of life ought to result in differences in the quality of the mother-infant attachment relationship at one year. This laboratory based assessment involves two separations of parent and child and two reunions with the parent. Focus is upon the infant's behaviour, particularly during the reunions, where individual differences are measured in terms of the strategies employed to cope with this stressful situation (Ainsworth et al, 1978).

A brief overview of the classifications of infant attachment follows and is necessarily condensed and simplified (George, Kaplan & Main, 1996; Slade & Aber, 1992).

Securely Attached Infants (B)

Most infants assessed in the Strange Situation demonstrate a pattern of attachment and exploratory behaviours that Ainsworth believed to be evidence of a 'secure' attachment relationship (about 65% of white, middle class American and British infants exhibit this pattern). On entering the playroom and seeing the stranger the infant may show initial wariness. However, by checking with mother (this is considered to be displaying secure base behaviour) these infants derive sufficient security to explore their environments. When the parent leaves the room, the secure infant registers her departure, perhaps by crying or looking for her, perhaps by diminished quality of exploration and play. The infant will not use the stranger as a substitute play partner and will not carry on as before although the infant may be somewhat comforted or distracted by the stranger. When the parent returns the infant may signal or greet the mother actively or allow themselves to be picked up and comforted. They clearly derive comfort and security from mother's return and are able to return to exploring. Parents of securely attached infants have been found to be sensitively and contingently responsive to their infants' cues.

Anxious-Avoidant Infants (A)

The largest group of children that fall into the insecure category are described as having an anxious-avoidant attachment pattern. Prior to separation, avoidant infants are somewhat difficult to distinguish from secure children as they too are interested in exploring the new environment. However, they do not appear to need a warm-up period to overcome wariness, do not check in much with their parent through proximity seeking and do not seem wary of the stranger. When the mother leaves the room avoidant children do not seem to protest and there appears little change in the level of their play. They may

find it relatively easy to substitute the stranger for mother as playmate. It is upon the reunion that avoidant infants are most easily distinguished from secure infants. As the mother approaches, avoidant infants either conspicuously avoids or ignores her. There is little or no proximity seeking, no distress and no anger and the response appears unemotional. The child's attention is focused on the toys or environment throughout the procedure. Parents of avoidant children have been found to be predictably unresponsive and rejecting to bids for comfort and are controlling in free play. Approximately 20% of white middle-class American and British infants are classified insecure-avoidant.

Anxious-Resistant Infants (C)

A small number of children show a pattern of attachment behaviours that is more easily interpreted as non-optimal or maladaptive. They are called anxious-resistant or anxious-ambivalent children. These children may be wary or distressed even prior to separation and they explore very little. They seem preoccupied with the parent throughout the procedure and may seem angry or passive. Upon reunion with the parent, the child fails to settle and take comfort and continues to focus on the parent usually crying in an angry or distressed manner. They fail to return to exploration or play. Parents of resistant children are unpredictably responsive and inconsistent to bids for comfort and are unresponsive or unavailable in free play. Roughly, 10-14% of white, middle-class American and British infants are judged to be avoidantly attached to their mothers.

Disorganised disoriented (D)

This category is the most recently identified. Approximately 12% of infants in

white, middle-class American and British samples fall into this group, however, substantially more infants fall into this group in high-risk samples (Cassidy, 1994). These infant's show disorganised and/or disoriented behaviours in the parent's presence that suggest a lapse of a behavioural strategy in the face of the attachment system being triggered. For example, the infant may freeze with a trance-like expression or they may rise at the parent's return only to fall prone and huddled on the floor.

Mary Ainsworth's work tended to emphasise the behaviour of the mother-child couple, however, as described above, the underlying assumption is that the different patterns of attachment in the Strange Situation derive from different relationship histories and reflect different underlying representations of the relationship (Slade and Aber, 1992).

Attachment theory can be thought of as consisting of two parallel but interrelated dimensions: 1) an interactional or behavioural dimension, concerned with the development of and maintenance of particular patterns of behaviour that are established in infant-parent interactions and 2) a representational or cognitive dimension based on cognitive development and psychoanalytic theories. This second dimension of attachment theory is concerned with how intimate personal interactions are established or internalised in the mind as internal working models of caring experiences and how these schema increasingly become a central cognitive-affective structure of the child through the internalisation of early parent-child interactions (Blatt, 1995).

1.2.2 A move to assessing the representational level

As stated above, the representational dimension of attachment theory is based on the assumption that the pattern of caring relationships increasingly become a central cognitive-affective structure of the child through the internalization of early parent-child interactions. The patterns of secure, insecure-avoidant and insecure-resistant attachment establish fundamental cognitive affective schemas that not only influence behaviour in childhood, but also form the basis for normal and abnormal behaviour in adolescence and adulthood (Blatt, 1995).

The development of methods to assess attachment patterns through narrative reports has expanded the focus of attachment researchers to an exploration of mental structures or internal working models of attachment. These findings have redirected the focus of attachment theorists to the structure of the representational world (Diamond and Blatt, 1994).

It is the case that parental behaviour, however subtle, mediates the relation between a parent`s state of mind with respect to their own attachment history and their infant's Strange Situation behaviour toward that parent (George, Kaplan & Main, 1996). Fonagy, Steele and Steele (1991) have demonstrated that, within the sample referred to in this thesis, assessment of the parents' attachment status before the birth of the child predicted attachment classification to mother at one year and to father at eighteen months (Steele, Steele & Fonagy, 1996).

The Adult Attachment Interview

The primary method for assessing adults' internal working models of attachment is the Adult Attachment Interview (George, Kaplan & Main, 1996). This interview is an hour long, semi-structured interview focusing upon the description and evaluation of early attachment relationships and attachment related experiences. The Adult Attachment Interview has been shown to be stable across time, unrelated to intelligence, unrelated to both short-term or lang-term memory and unrelated to social desirability and not attributable to interviewer effects (George, Kaplan & Main, 1996). Subjects are asked directly about childhood experiences of rejection, being ill, hurt and upset as well as about experiences of loss separation and abuse. The assessment of the interview focuses on the overall coherency and consistency observable in the participant's description and evaluation of childhood experiences, and upon the participant's ability to collaborate with the interviewer by giving complete but succinct answers, remaining on the topic enquired about by the interviewer and speaking in a clear non-confused manner. The aim of the interview is not to appraise the *actual* experiences of the subject's childhood but to elicit their representations of the *meaning* of early experiences through their reconstructions in the telling. Once scores are assigned to the interview text the interview is considered again in the light of a classification system which delineates several possible 'states of mind' with respect to attachment. There are four categories of 'states of mind with respect to attachment' that are considered to provide the best fit to one's primary attachment relationships and attachment-related experiences and are widey in use. They are known as the secure-autonomous, dismissing, preoccupied and

unresolved/disorganised patterns (George, Kaplan & Main, 1996). A brief overview of the classifications follow.

Secure-autonomous (F)

The interview of the secure-autonomous adult is characterised by coherent discourse. These adults are valuing of attachment but seem objective regarding any particular event or relationship. Their descriptions and evaluations of attachment-related experiences is consistent whether the experiences are favourable or unfavourable.

Dismissing (D)

These interviews are characterised by incoherent discourse. The subjects are dismissing of attachment related experiences and relationships. They tend to normalise people and experiences with generalised representations of their history unsupported or actually contradicted by autobiographical episodes recounted. The transcripts tend to be excessively short.

Preoccupied (E)

These interviews are also characterised by incoherent discourse, however, these subjects are preoccupied with or by past attachment relationships and experiences. The speakers often appear angry, passive or even fearful. Their sentences are often long, grammatically entangled or vague and the transcripts excessively long.

Unresolved/disorganised (U/d)

The unresolved interview is identified mostly during discussions of loss or abuse when the individual shows a striking lapse in their monitoring of reasoning or discourse. For example, the individual may briefly indicate a dead person is believed still alive or may momentarily indicate that they killed someone with a childhood thought. The subject may otherwise fit into one of the above categories.

1.2.3 Recent perspectives on attachment theory

In the beginnings of attachment research, researchers primarily focused their investigations on the elucidation of attachment processes in infancy and on the developmental sequelae of secure and insecure infant-care-giver attachments.

More recently, researchers have conceptualised attachment as remaining critical to the child`s continual adaptation even though it changes in organization as the child develops throughout the preschool period; this is in keeping with Bowlby's perspective (Cicchetti, Cummings, Greenberg & Marvin, 1990). The need to understand the developmental transformations of attachment processes in the preschool years has become increasingly critical. The move to the representational level described above and the concept of internal working models of attachment figures and of oneself has enhanced our ability to investigate these questions. The implication seems to be that attachment, for the most part, should not continue to be conceived of as an autonomous

area of study but that its effect on later developmental tasks should also be addressed (Cicchetti et al, 1990). Accordingly, theorists and researchers have recently begun to examine the different types of attachment relationships described above from slightly different perspectives. Two of these are relevant to this thesis and are described below.

Communication Perspective

The communication perspective of attachment rests on the assumption that parents transmit their own patterns of relating to children, initially through behavioural-affective interaction patterns, but later also through verbal dialogue about past, future and hypothetical experiences (Bretherton, 1995c).

Open and effective communication has been found to have links between parents and children and secure attachment in infancy, toddlerhood and young children (Bretherton, 1987). (See Chapter Two for more on this) For example, Main and colleagues (1985) describe the secure six-year-old as being at ease in exploration of feelings and potentialities. Secure parents, like their children, were characterised by the ease with which positive and negative aspects of attachment experience were communicated and integrated.

In order to clarify this underlying assumption about the theoretical connections between emotionally open communication and adequate, adaptable internal working models Bretherton (1987) gives the following illustration. If an attachment figure

appropriately responds to security-seeking signals, the infant learns a sense of trust that results in an optimal balance of attachment and exploratory behaviour. If the attachment figure does not respond appropriately to the infant's signals, the infant will feel dissatisfied and misunderstood or disavowed. This, in turn, has consequences for the internal working model the infant will construct of self and the attachment figure. Mutually satisfying communication is impossible without shared working models. In secure dyads, attachment signals are mutually responded to and understood and so the internal working models are adequate and also open to fine-tuning and up-dating. Such patterns of communication may retain their qualitative stability, even though the child's communication skills become more complex (Bretherton, 1995c).

Affect Regulation

Another of these more recent ways of looking at attachment patterns, which is related to and has overlaps with the communication perspective described above, is that of emotion regulation and it has been proposed that emotion regulation and quality of attachment are closely linked (Cassidy, 1994). This recent conceptualising speculates that insecure and secure organisations can be differentiated from each other on the basis of affect regulation strategies (Slade, 1993). Central to the definition of emotion regulation is that it involves both the suppression and heightening of emotions, the regulation of attention, and involves factors both intrinsic (temperament) and extrinsic (particularly the child's relationship with parents) (Thompson, 1994). Emotion regulation is thought to be influenced by the attachment relationships through the child's expectations or working models of parents behaviour. For example, the secure child is thought to develop an expectation that his or her emotional signals will be responded to.

Because the parent is sensitive to the child's signals, both negative and positive affects will be freely expressed and experienced as useful in alerting the parent during times of distress. Flexible emotion expression could be seen as part of a strategy aimed at allowing the infant freedom to explore while assuring safety (Cassidy, 1994). The pattern of openness to a range of emotions seen in secure infants is also evident in the Adult Attachment Interviews of secure-autonomous parents regardless of the quality of the actual childhood experiences being discussed (Cassidy, 1994; George, Kaplan & Main, 1996).

One of the hallmarks of insecurity appears to be an individual's inability to integrate negative affects, memories and thoughts into their representations of themselves or their parents (Slade, 1993). In fact, difficulties regulating and modulating negative affects are fundamental to the insecure organisations and there appears to be a distinction between minimising and maximising strategies (Cassidy, 1994). It has been proposed that when activation of the attachment system consistently results in rejection, infants develop a strategy of minimising attention to the attachment relationship; these infants are most often classified as avoidant as described above (Main & Solomon, 1986). In order to minimise the attachment relationship a strategy of minimising negative emotions such as anger, sadness and distress could be useful as it avoids rejection of attachment behaviour while also permitting the infant sufficient proximity to the parent for safety (Cassidy, 1994). Positive affect may also be minimised as it engages the attachment figure and signals a readiness for open interaction.

Infants classified as insecure-resistant or ambivalent display angry, resistant

behaviour toward the parent in the Strange Situation. What attachment related experiences might lead to a strategy of heightening emotions ? An infant who has experienced minimally or inconsistently available parents needs to develop a method of heightening the importance of the attachment relationship. Heightened negative emotionality can be viewed as a component of the child`s strategy to gain the parent`s attention and may be chronic because the child recognises that to relax and allow him or herself to be soothed by the parent is to run the risk of losing them (Cassidy, 1994).

Both insecure strategies described above seem to be manifestations of a failure to integrate negative affect, yet they function in different ways. Dismissing or avoidant individuals minimise negative feelings; preoccupied or resistant individuals exaggerate them (Slade, 1993). The presumption is that these strategies develop because of the need to preserve the primary attachment relationship. That is, infants whose parents are uncomfortable with negative affect will avoid it and those whose parents are overly responsive to negative affect will exaggerate it. However, because there are so few infants classified as insecure-resistant there is little empirical data to demonstrate a heightening of negative affect in these infants. There is evidence of minimisation of negative affect in the insecure-avoidant pattern (Cassidy, 1994).

1.3 CONCLUSIONS

This chapter has reviewed the literature concerning the main ideas relevant to this thesis such as mental representations, internalisation, attachment theory and internal working models. What is needed is to develop measures of assessing the internal world of the young child with regard to the attachment system which are derived from, or are consistent with, attachment theory, yet reflect the new skills, developmental tasks and physical-social environment of the growing child (Cicchetti, Cummings, Greenberg & Marvin, 1990). This issue will be examined in greater detail the next chapter.

CHAPTER TWO

ASSESSING THE INTERNAL WORLD OF THE YOUNG CHILD

2.1 INTRODUCTION

The previous chapter reviewed literature concerning various theoretical perspectives regarding mental representations, internalisation, internal working models and attachment theory pertinent to this thesis. For example, Chapter One reviewed classic psychoanalytic theories and more contemporary ideas regarding internalisation and the representational world. It also examined, in some detail, attachment theory's notion of the internal working model and empirical methods with which to assess them. The current chapter will continue the theme of exploring the internal world by looking at past and present empirical attempts at assessing the young child's internal world. A brief history of investigations using the technique of doll play, mainly by cognitive psychologists, opens the chapter. This is followed by a review of the use of and understanding of play to access the inner world by child psychoanalysts. The chapter will then review the empirical literature concerning assessing the internal working models of young children and introduce the instrument to be employed in this investigation. It will focus on a recently developed technique known as the MacArthur Story Stem Battery (MSSB) (Robinson, Mantz-Simmons, Macfie & The MacArthur Narrative Working Group, 1992). This chapter will also introduce the design of the current study and the unique opportunity it allows to apply the MSSB to children about whom much early history is known.

2.2 DOLL PLAY TECHNIQUES

Doll play has been used both by researchers and clinicians such as child analysts and play therapists as a means of gaining understanding of the child's internal world for decades. The work of R.R. and Pauline S. Sears at the Iowa Child Research Station in the mid-1940's utilised doll play as a method in the study of personality development (Levin & Wardwell, (1962). There are numerous variations on the theme of doll play, but essentially the young child is presented with a set of dolls - usually a family - and a setting in which the dolls are to operate - such as a house - and are told to manipulate the dolls while the child tells a story about them. Because of the theoretical disposition of the early investigators, the most frequent variables measured were derived from behaviour theory and were indices of acquired drives in children. Hence, more than any other behaviour fantasy aggression has been measured by this technique (Levin & Wardwell, 1962).

2.3 CHILD PSYCHOANALYSIS

Child psychoanalysts have long viewed play as a window into the inner life of the child and play activities are thought to represent fantasy configurations that are uppermost in the child's mind and accessible to expression (Marans, Mayes, Cicchetti, Dahl, Marans & Cohen, 1991). In psychoanalytic formulations, children's play serves the function of mastery, wish fulfilment, assimilation, reduction of anxiety and also communicates current family events that have a frustrating or anxiety-raising meaning

for the child (Freud, A. 1946; Marans, Mayes & Colonna, A., 1993; Solnit, 1987). The analyst focuses on the specific themes in the play, while simultaneously attending to other domains such as accompanying affects and changes or disruptions in play. It is out of the synthesis of the observations from many domains that hypotheses are generated about the child's developmental status and the dominant concerns and intra psychic conflicts (Marans et al, 1991).

Thus, observations of play activities emerging in the consulting room have a central role in the diagnosis and psychotherapeutic treatment of young children. However, in view of the central role of play in the diagnostic and therapeutic process there have been surprisingly few systematic investigations of the specific play themes, modes of presentation, and the methods of observation that lead to clinical inferences and hypotheses. In a study by Marans et al (1991) attempts were made to address this lack of empirical evidence by developing a systematic and reliable method for assessing what emerges in the consulting room with children.

In particular, the study developed a technique for tracking and marking the appearance of specific themes during a child's play in an analytic session. These concepts were informed by psychoanalytic theory and child development and included such items as bodily damage, rejection, reconciliation, fighting and attacking and cleaning and fixing. The system was first tested on a non-clinical group of four- to six-year-olds. After refining the coding system and improving observer reliability, results of five children are reported. This sample is quite small and so results must be treated with some doubt as to their generalisability, however, the authors raise some relevant points

for the present study. Regarding the themes the five children used, they clearly alternated between themes related to setting the scene and those relating to dramatisation of the fantasy. More importantly, the authors found that analytically informed clinicians can agree with *moderate* reliability about the predominant themes presented by a child during play interviews and that with revision and instruction, agreement among observers using this technique generally improves. This is relevant to the present study as the main tool of investigation to be used has little published data regarding inter-rater reliability and the extent to which themes can be operationalised well enough for rater reliability is one of the questions this thesis will address.

2.4 ASSESSING INTERNAL WORKING MODELS OF YOUNG CHILDREN

As referred to in the previous chapter, a central focus of attachment research over the last ten years has been to better understand the transition from sensorimotor based representations of attachment relationships during infancy to cognitively based representations of attachment in older children (Fury, Carlson & Sroufe, 1997). This has been attempted in various ways. For example, Kaplan and Main (1985) were the first to suggest that children's drawings might capture representations of attachment. In a recent study of high-risk 8-9 year-olds, children's representational models of self and attachment figures were investigated in family drawings (Fury et al, 1997). The results of the study generally supported the use of their drawings as a measure for tapping into children's representational models of attachment.

2.4.1 Representation and narrative

Slade (1997), referring to clinical work, has suggested that for many children much of therapy involves attempts by the child and therapist to co-construct out of the child's conflictual and often chaotic experiences, emotionally coherent narratives. Once such narratives are formed, she argues, children are more capable of regulating their emotions as well as their behaviour. Narratives are not only viewed as intra psychic structures constructed by children in isolation but as fundamentally interpersonal, emerging and developing in the context of significant relationships. It has been suggested that narrative capacities introduce a new level of self and emotional regulation (Stern, 1985; Wolf, 1990).

The link between the internal world, representation and narration becomes particularly salient for both psychoanalytic and developmental researchers when we consider that the organisation of the mind and the way in which it functions may be revealed through particular forms of narrative discourse, and that this may hold true for children as well as adults. Chapter One introduced the ideas of attachment theory and specifically that of the `internal working model`. It the concept of the internal working model that is the theoretical underpinning used in narrative research such as the Adult Attachment Interview described in the previous chapter. Clinical psychoanalytic data are based on autobiographical narrations told by the patient to the analyst. Similarly, a large number of experimental studies of children are based on stories or narratives that children tell about themselves and their families during a structured play situation. And, coming full circle, it is these narratives from childhood which begin to form an autobiographical

accounting that ultimately evolves into the life history a patient first presents to the analyst.

According to Daniel Stern (1985), the making of a narrative is not the same as any other kind of thinking or talking. The making of a narrative involves thinking in terms of persons who act as agents with intentions and goals that unfold in some causal sequence with a beginning, a middle and an end. Stern refers to this as a building up of a 'narrative self' and suggests that it constitutes an important developmental domain in children in that it involves the translation of personal experience into narrative form. The idea that personal experience might take on the character of a narrative construction was implied in one of Freud's earliest works. In his essay Screen Memories (1899), Freud questions whether we have any memories from our childhood; memories relating to our childhood may be all we possess.

Bretherton, Ridgeway and Cassidy (1990) draw our attention to the idea that play and language could be useful vehicles for assessing children's internal working models of self and other in the attachment relationship but urge caution. They note that, as Bowlby (1980) and Stern (1985) have pointed out, language has a curious relationship to internal working models. A verbal child can be given verbal guidance on how to interpret specific interpersonal events and thus acquire internal working models vicariously. This secondhand information may clarify the child's non-verbal experience, but it may also be at odds with it.

Bowlby's ideas about the importance of parent-child communication in

attachment development are reflected in recent trends in assessment (particularly the communication perspective referred to in Chapter 1), especially in the use of children's narratives to assess attachment status (Oppenheim & Waters, 1995). Buchsbaum and Emde (1990) feel that an important aspect of how the child makes sense of the world involves the process of telling a story about oneself and others. A most important aspect of this process is that the child shares experiences with others; in this way, the child's caregivers come to influence or 'co-construct' the story lines. Both the developments in language and the caregivers' increasing influence through narrative 'co-constructions' of experiences are important for many aspects of a child's development.

As stated, caution has been advised when using language as a vehicle for assessing children's internal working models of self and other in the attachment relationship. Buchsbaum and Emde (1990) wonder if the onset of narrative language introduces a disjuncture in the child's experience. Winnicott (1965) thought that the 'false self' arose from socialization experiences and was made possible by the use of language. Bowlby, and later Stern (1985), extended this idea by making a formulation that ties a separate domain of self-experience to language onset. According to this view, the narrative domain is susceptible to persuasive distortion and is more distant from a core self built up from prior sensorimotor and more direct emotional experience. Once language occurs, it is possible that children present more socially acceptable responses to moral and affective situations and mask their truer feelings.

In the first study designed to assess internal working models of children from a narrative perspective, Main, Kaplan and Cassidy (1985), elicited responses from forty six-year-olds to drawings of mother, father and child in separation related situations (the Separation Anxiety Task). The six-year-olds who had been classified as securely attached in infancy gave embellished, coherent and open responses to the pictures and tended to volunteer information regarding their own separation experiences. Subjects classified as avoidant in infancy with mother described the children as sad but could not say what the children might do to cope with the situation. Children classified as insecure-disorganised were often silent or gave bizarre responses.

Before describing studies using the play narrative technique to assess the representational world of the young child, the role of adults as partners in the co-construction of children's narratives must be considered. Children's abilities to talk about emotional and personal issues emerges in the context of conversations with their parents and represent the joint contributions of both child and parent (Oppenheim, Emde & Wambolt, 1996). Recent empirical work has demonstrated how parents help their children structure or construct play narratives and how different parental styles influence the nature and quality of the play narratives (Oppenheim, Emde, Wambolt, 1996; Oppenheim, Nir, Warren, & Emde, 1997).

Oppenheim et al (1995), in a recent study of parent-child co-construction of affect and conflict narratives, showed associations between the level of inter subjectivity and shared affect in dyadic constructions and the coherence and number of prosocial

themes in the children's independent narratives. In other words, the ability of children and parents to share both meaning and affect in the co-construction facilitated the child's independent narrative construction and there was evidence of separate contributions from mother and father in the child's narratives. Their work emphasising co-construction processes in the development of internal working models highlights the lack of attachment theory-based studies of how parents communicate with their children about affective experiences (Bretherton, 1995c)

2.4.2 The MacArthur Story Stem Technique

The studies reviewed above document interesting connections between sensitive and emotionally open communication by attachment partners within parent-child attachment relationships and each partner's separate capacity to talk about attachment issues openly and coherently (Bretherton, 1995c; Oppenheim & Waters, 1995).

The MacArthur Story Stem Battery (MSSB; Robinson, J., Mantz-Simmons, L., Macfie, J. & The MacArthur Narrative Working Group, 1992) is a relatively new research technique which provides a window into the representational world of children, their understanding of family relationships and their views of themselves. The MSSB ellicits children's play narratives in standardised way so that they may be coded systematically (von Klitzing, Kelsay & Emde, 1998).

This method has been used in a number of studies in addition to the co-construction studies described above, but few have attempted quantitative analyses of the data. For example, one qualitative study compared different stories between a sample of maltreated and non-maltreated children (Buchsbaum, Toth, Clyman & Cicchetti, & Emde, 1992).

Story stem techniques were first used to examine children's moral development (Buchsbaum and Emde, 1990; Woolgar, 1996). Since morality is influenced by interactions with significant others and involves dealing with the roles of others in the midst of conflict, the story stems were constructed in two areas. One group of stems probed for narrative themes in the area of moral development and the other group for themes in the area of family relationships. Buchsbaum and Emde (1990) found that by 36 months of age children were clearly able to produce narrative representations of emotional themes. There was evidence of common themes as well as 'rich individual variation in the domains of empathy, prosocial behaviour, adherence to rules, reciprocity, and aspects of family relationships'. The findings indicated the potential of this technique for obtaining data about children's internal and external experiences.

Bretherton, Ridgeway and Cassidy (1990) reported their findings of a study assessing the internal working models of attachment relationship in three-year-old children using the story stem technique. The stories were designed to elicit individual differences in the children's enactment of a variety of attachment-related issues. They devised a system for classifying the story completions as indicative of secure or insecure

attachment and compared this to a variety of other assessments. Detailed verbal and behavioural transcriptions were made of the video-taped story completions and the transcripts were subsequently analysed in two ways. First, the content was analysed in order to examine the children's ability to understand the story issues and to create a resolution. Second, each transcript was considered as a whole in order to classify the children's story presentations as reflective of secure or insecure attachment patterns.

The authors established separate criteria for security for each story. For example, in the 'monster' story responses were coded secure if the parents dealt with the child's fear of the monster or the child approached the parent for comfort. Two types of criteria were used for categorizing the responses as insecure. If the child avoided the main issue of the story or gave odd or incoherent responses an insecure score was given. Avoidance of the story issue was regarded as indicative of avoidant insecurity because the authors attributed such behaviour to defensiveness with respect to attachment issues. Odd and disorganized responses were regarded as indicative of a different type of insecurity. It is interesting to note that no consistent pattern of response was suggested for ambivalent children. The authors concluded that coherent and emotionally open responding to attachment story stems were successful in predicting three-year-olds security versus insecurity in a separation-reunion procedure at the same stage.

The above findings indicated the potential of the story stem technique for obtaining data about different aspects of the young child`s internal world and it is this technique which will be employed in this study.

2.1.5 MacArthur Narrative Coding System

How one codes children's play narratives depends on the questions researchers are interested in (von Klitzing, Kelsay & Emde, 1998). For example, the rating approach described by Marans et al (1991) above approximated the clinical process which makes inferences about the concerns that are uppermost in the child's mind at the time of the play interview and is one which attempts to synthesise marking the appearance of specific themes which are defined by a combination of discrete behaviours, narrative content and accompanying affects. As mentioned above, Warren and colleagues (1996) developed a coding scheme which focused on children's emotionality and self-representations.

Two broadly compatible, but distinct, approaches to conceptualizing internal working models after infancy have been taken to date: representational approaches and regulatory-style approaches. Representational approaches analyse children's verbal response to attachment related story stems and children's drawings of themselves and families. Regulatory-style approaches examine individual differences in how preschool children regulate affect and behaviour in stressful situations.

The MacArthur Narrative Coding System makes use of a core set of stories (the MacArthur Story Stem Battery described above) for research groups dealing with play narratives and facilitates comparison of results between groups and is the coding system used in this thesis. The MNCS assess three areas: content themes, parental representations and performance themes. Content themes and parental representations are coded in categories whereas different aspects of performance are coded on scales with

defined scale points. The MNCS may be sen as containing certain elements of both representational and regulatory approaches. In terms of a representational approach, the children's verbal response to the story stems are analysed for thematic content and narrative coherency. Some attention is also given to style of performance and type of affects expressed. However, there is no differentiation when coding between looking at affect from a thematic content point of view or from a regulatory point of view. For example, joy is coded the same when a subject child smiles or laughs or when the subject has the dolls laugh or say they are happy. Scales such as control and anxiety are more clearly related to the subject's ability to regulate affect and behaviour.

2.5 THE LONDON PARENT-CHILD PROJECT

The empirical chapters of this thesis draw on data collected in the context of a longitudinal study of attachment patterns being conducted by Drs. Howard and Miriam Steele and Professor Peter Fonagy of the Anna Freud Centre and University College, London. The study is known as the London Parent-Child Project (Fonagy, Steele, M., Moran, Steele, H. & Higget, 1991; Steele, H, 1991; Steele, M, 1990).

The first phase of the London Parent-Child Project was launched in 1987 when one hundred pregnant woman were recruited for the study which was described as "*a study aimed at better understanding how one's own experience of childhood influences the parenting of the next generation*". Recruitment took place during prenatal classes at

the Obstetrics and Gynaecology Department of University College Hospital during the autumn and winter of 1987. Selection criteria included primiparous status. current cohabitation with the father of the child, fluency in the English language and age above 20 years. About 50% of those who were told about the study agreed to participate. While in their last trimester of pregnancy various measures were used to collect information. Demographic, personality, social context and attachment variables were assessed.

At approximately one year post-partum, the second phase of the project began. This included assessing the twelve month old infant's quality of attachment with mother using the Strange Situation Test. The Strange Situation was conducted again with father when the infants were approximately eighteen months old.

The third phase of the Project has now been completed. Table 2.1 (at the end of the chapter) outlines the three phases of the Project including the main instruments of assessment. The third phase of the London Parent-Child Project consisted of two visits by the families. The first visit took place as close to the child`s fifth birthday as possible and the second six months later. For the first visit the children and their parents were invited to a new laboratory based at The Anna Freud Centre. The playroom was located in a purpose built hut in the back garden equipped with a one-way mirror to enable the tasks to be video-taped. Each mother and child pair was first seen in this brightly coloured playroom where the modified Strange Situation (described in Chapter 6) was administered. Following this, the parent was taken to the main building yards away in order for her to complete an Adult Attachment Interview (Appendix E.1) and the Child Behaviour Checklist (Appendix C). The child remained in the playroom and was

introduced to a female examiner who administered the MacArthur Story Stem Battery and the Bus Story tasks. The second visit took place in a new 'strange' place at University College, London. In the second visit a modified Strange Situation with father was conducted after which the child participated in other tasks with a female examiner.

2.6 CONCLUSIONS

The aim of this chapter was to review studies that have made attempts to assess the internal world of the young child and to introduce the design and main instruments used in this study. This study will explore the results of the application of the narrative task to a large group of non-clinical five-year-old children. There also remains the need for the MacArthur Story Stem Battery to have its psychometric properties investigated through systematised coding and inter-rater reliability analysis and this is addressed in the following chapter. Work on this has begun, however, Woolgar (1996) was only able to utilise the content and parental representation portions of the MacArthur Narrative Coding System. This study is distinct in that it makes use of the entire MacArthur Narrative Coding System, including performance codes.

Chapter Five presents the results of attempts to replicate studies referred to above which found associations between the children's responses to the story stem task and the

well established Child Behaviour Checklist. Subsequent chapters present associations to demographic variables collected before the birth and during the infancy of the target children.

Later chapters report on the longitudinal and concurrent associations between the narratives with categories of infant-parent, child-parent and parental representations of attachment security. There is a relative absence of work comparing the MacArthur Story Stem Battery responses to children's attachment history and this is the central aim informing the current project. In addition, an attempt is made to construct theoretical profiles of secure and insecure children's responses to the story stem battery and to apply these profiles to the four groups of attachment patterns in the sample.

TABLE 2.1 : PROJECT DESIGN

PHASE I - The prenatal phase

Pre-natal
This phase took place during the last trimester of a first pregnancy. The Adult Attachment Interview was administered to 100 couples expecting their first child; 98 were interviewed in their homes and two were interviewed in the laboratory.

Interviews with the mother and father to be were conducted concurrently in different rooms. Following their respective interviews, both members of each couple completed a group of questionnaires.

Summary of measures used
AAI
Marital satisfaction questionnaire
Social support questionnaire
Experience of pregnancy questionnaire

PHASE II - 3 to 18 months

3 months of age
Three months postpartum, 2 questionnaires were sent to each of the 100 mothers and each of the 100 fathers in order to asses their respective transitions to the parental role.

Summary of measures used
Schaefer-Manheimer Postnatal Research Inventory
Adaptation to the Maternal/Paternal Role Questionnaire

12 months of age
At 12 months postpartum all the families were invited to the laboratory for the first time. At this time 97 12 month old children were assessed with their mother in the Strange Situation. Following the Strange Situation assessment, the infants were assessed on the Mental Development Scales of the Bayley scales in the presence of the father. Several new questionnaires were completed by both mother s and fathers.

18 months of age
At 18 months postpartum, 90 children were assessed with their father in the Strange Situation. A further group of questionnaires were completed by both mothers and fathers.

Summary of measures used
SSn with both mother and father
The Bayley Mental Development Scales
The Short form of the Mill Hill Vocabulary Scales
Langner 22 Index
Infant Characteristics Questionnaire

PHASE III - The five year visits

5 years of age
Close to their fifth birthday, the children and their parents were invited to a new laboratory where 89 children were assessed with their mother in a modified Strange Situation procedure (MSSn). Following this, the MacArthur Story Stem Battery (MSSB) was administered, while the mother and father were independently engaged in the AAI, administered from a different interviewer form the prenatal visit. Several new questionnaires were also completed by both mothers and fathers.

5½ years of age
Six months later, 71 children were assessed with their father in the MSSn in a different playroom from that of the five year visit. A further set of questionnaires was also completed by both the mothers and fathers.

Summary of measure used
MSSn with both mother and father
The MacArthur Story Stem Battery
The Child Behaviour Checklist
The Bus Story measure of expressive language
The Spanier Dyadic Adjustment Scale

CHAPTER THREE

ANALYSIS OF THE MACARTHUR STORY STEM BATTERY NARRATIVES

3.1 INTRODUCTION

This chapter is concerned with the ratings derived from the application of the MacArthur Narrative Coding Manual (Robinson, Mantz-Simmons, Macfie, & The MacArthur Narrative Working Group, 1995) to the story completion task obtained from 89 five year old children described in the previous chapter. The focus of this chapter is upon the extent to which reliable codes were derived from the children's story completions.

The current study makes use of both audio and visual material from video recordings, audio recordings and verbatim transcripts of the children's stories. Thus, it was possible to code not only the content of the children's stories but the way in which the children presented both themselves and their stories.

3.2 METHOD

3.2.1 Design

The subjects took part in a story stem completion task using doll play. These story stems, known as the MacArthur Story Stem Battery developed by Inge Bretherton, Helen Buchsbaum , Robert Emde and the MacArthur Narrative Group are designed to elicit young children's mental representations utilizing a narrative or storytelling technique (Bretherton, Oppenheim, Buchsbaum, Emde & The MacArthur Narrative Group, 1990). Eleven of these story stems were chosen and each story deals with an issue relevant in the day to day life of a typical

five year old child. For example, loyalty conflicts between a friend and a sibling, punishment and discipline, brief separations from parents, minor injuries and family relationships. All the story stems were presented to the children by the experimenter who, using the doll figures, introduced the narrative containing the dilemma. The specific story stems and their dilemmas are outlined in Section 3.2.2. When the subject was male, the characters of the children in the stories were presented as male and male dolls were used; where the subject was female, female dolls and characters were named. The stories were presented to all the children in the same order. The female experimenter then asked the children to complete the narrative, showing as well as telling her what happened next. If the subject did not address the dilemma, the experimenter intervened with non-directive prompts similar to the techniques used in clinical interviews with children. Hence, each child was presented with eleven story stems to complete, containing some form of relationship dilemma, using both words and actions in their narrative.

3.2.2 The story stem battery

The eleven stories are summarised below (see Appendix A.1 for the full protocol) with the embedded dilemmas and the explicit issues about which the children are expected to elaborate.

1. **Spilt juice** (SJ): While the family is seated at the dinner table, the protagonist accidentally spills his/her juice on the floor (issue: between nurturance and discipline. What happens about the mess ? Is anyone punished ? Does anyone clean up ?).

2. **Mother's headache** (MH): The protagonist and mother doll are sitting together watching television. The mother announces that she has a headache, turns off the television and asks the child to find something quiet to do on his/her own. A same sex friend of the child arrives and implores the protagonist to let them watch television together (issue: conflict between the mother's request and the friend's desire to watch television).

3. **Three's a crowd** (3C): The protagonist and the same sex friend are playing ball together in the garden, while the parents are talking to the neighbours at the other end of the garden. When the younger sibling asks to join the game, the protagonist agrees but the friend refuses saying 'If you let your little brother/sister play, I won't be your friend anymore' (issue: conflict of interests/loyalty between the friend and the sibling).

4. **Burnt hand** (BH): The mother is cooking dinner while the protagonist watches. Father and sibling are sitting at the table. Mother warns the protagonist to stay away from the stove but the child character cannot wait and knocks the pan off the stove burning his/her hand (issue: direct disobedience has resulted in injury which requires attention).

5. **Lost keys** (LK): The parental characters are involved in a heated argument in front of the protagonist about who lost a set of keys (issue: how to cope with parental conflict).

6. **Sweet shop** (SS): While in a sweet shop the protagonist asks the mother for some sweets but she refuses saying he/she has already had some that day. When mother is not looking the child character takes some off the shelf but is observed by the shopkeeper (issue: direct disobedience of mother and fear/shame of being caught by shopkeeper).

7. **Separation** (SN): The parents leave on an overnight trip leaving the protagonist and sibling with the grandmother (issue: separation anxiety).

8. **Reunion** (RN): The grandmother announces to the children that their parents have arrived home the following morning (issue: reunion behaviour).

9. **Bathroom shelf** (BS): The mother leaves the house briefly, having prohibited the children from touching anything on the bathroom shelf. During play the younger sibling accidentally cuts their finger and asks the protagonist to get a plaster (off the bathroom shelf). The protagonist reminds the sibling of the mother's prohibition but the younger sibling indicates his finger is bleeding (dilemma: the conflict between aiding the sibling and obeying the mother's prohibition).

10. **Exclusion** (EX): The protagonist's parents are sitting on the couch and the same sex parent asks the child to go to their room so the parents can have some time alone together. The child goes to their room and the experimenter shows that the same sex parent then leans over and gives the other parent a hug (issue: oedipal conflict).

11. **Biscuit tin** (BT): The younger sibling takes a biscuit from the tin and the protagonist reminds him/her that the mother said 'No more biscuits'. The sibling then pleads that the protagonist does not tell their parents who then enter (issue: will the protagonist tattle on the sibling ? Loyalty to sibling or parental rules).

3.2.3 Subjects

The 100 families who participated in Phases I and II of the London Parent-Child Project were contacted shortly before the children's fifth birthday and asked to participate in the follow-up research. Attrition since the 12 month visit was 6 children (or 7 %) and since the 18 month visit was 10 children (or 10 %). One child, whose parents participated pre-natally, was unavailable for the 12 and 18 month visits but then joined the cohort for the 5 year assessment. The single greatest identifiable cause of attrition being the fact that the families had moved outside of the UK.

Ninety-two of the original families agreed to participate. The mean age of the children (43 girls and 49 boys) was 61 months (range 59-65 months). Thus, ninety-two children took part in the study, with eighty-nine actually completing all eleven story stems. It was not possible to code two of the children`s stories due to technical difficulties with either the video or audio portions of the tape. One child began the battery but refused to complete it. The stems were administered as part of a testing procedure that took between one and half and two hours in the absence of the parents.

3.2.4 Procedure

The story stems were presented in the latter part of a series of tasks lasting approximately an hour and a half following the administration of the modified strange situation for five years olds with the mother. A female experimenter was introduced to the

subject and the mother then left them in the testing area so she could also 'tell stories' (the AAI) to another experimenter. All the children's stories were presented in the playroom of the Anna Freud Centre which is equipped with a one-way mirror to enable the procedure to be unobtrusively video taped. The subjects were also audio taped using a Sony Professional Walkman.

The subject was introduced to the Duplo doll characters; the protagonist, a same sex, same age child doll (called George for boys and Susan for girls), a same sex younger sibling (Bob for boys and Jane for girls), a same sex, same age friend (Dave for boys and Laura for girls), a mother, a father, a grandmother and a shopkeeper. In addition there were a number of Duplo props such as a table, chairs, sofa, a television, a cooker, and a bathroom set to facilitate the story telling (see Appendix A.1 for the list of props by story). The experimenter began the standard stem for each story specifying the use of both doll characters and the props and then invited the child to complete the story by saying, 'You show me and tell me what happens next'. The subject's spontaneous verbal and behavioural responses were followed by standard, non-directive prompts, particularly if the child did not address the conflict in the stems.

For example, the spilled juice story contains a dilemma in which the focus child, in reaching for some juice, spills the juice all over the floor. This stem was used to introduce the subject to the task. The child was encouraged to place the Duplo dolls and props in their initial positions, seated around a table before the presentation of the stem was started, to familiarize them with the dolls and foster participation. In the spilled juice stem, the experimenter emphasised the dilemma by moving the characters and props

through the sequence of events leading up to the accident including the act of spilling, which was itself emphasised, before the request to complete the stem. In this instance the standard prompt concerned the juice spilled on the floor; 'What happens to the juice George/Susan spilled on the floor ?' and was asked either when the subject did not respond or their response did not address the dilemma. The experimenter articulated the subject's character's behavioural responses and repeated the subject's vocalizations for the purpose of clarification and to encourage further elaboration by the child. At the end of each stem, the experimenter immediately set up the props for the next story stem involving the subject as much as possible. The presentation of the stems involved the experimenter moving both characters and props through the sequence of events leading up to the dilemma she was introducing.

Typically the administration of the entire battery took approximately forty-five minutes. The subjects responses were transcribed verbatim from the audio tapes and video tapes where necessary.

The story stems were later coded using the MacArthur Narrative Coding Scheme (Robinson, Mantz-Simmons, Macfie & The MacArthur Narrative Working Group, 1992). As discussed in Chapter Two, the MacArthur Narrative Coding System was chosen for this study because it makes use of a core set of stories which represent a common basis for groups dealing with play narratives and facilitates comparisons of results between groups. The full rating protocol is provided in Appendix A.2.

The MacArthur Narrative Coding Scheme Manual was developed by JoAnn

Robinson, Linda Mantz-Simmons, Jenny Mac Fie and the MacArthur Narrative Working group. This manual was designed for use with the MacArthur Story Stem Battery and attempts to quantify the children's responses to those story stems. The system was designed to be coded from video tape only, but the availability of the transcripts from the audio tapes facilitated the coding, and so both media were used.

During the first part of 1995, the MacArthur group produced the coding manual and presented a training course for the first time in Europe at University College, London. Three of the four raters, including the author, attended a week long workshop led by Linda Mantz-Simmons which took place in the Psychoanalysis Unit at University College, London. The purpose of the workshop was to train a group of students, mental health professionals and psychoanalytic researchers in the MacArthur Narrative Coding Scheme. The week of training was organised in terms of watching videos of children filmed during the story stem administration and discussing, as a group, the specific content and performance themes observed. Important to this process was determining what particular behavioural responses of the children would be coded. For example, it was agreed that a child`s raised eyebrows and visual referencing of the examiner would be rated as concern and instances of fear exhibited or expressed by the child would be coded as distress. Minor changes and additions to the MacArthur coding manual were made at this time and are noted in Appendix A.2. The three raters who attended the workshop trained the fourth rater. These four raters then spent an additional forty to sixty hours together as a group, reading transcripts, watching video tapes and refining their coding skills.

The MacArthur Narrative Coding Manual is divided into three main sections. The

first deals with content themes, the second with parental representations and the third with performance codes. Content themes include themes such as aggression, affection, injury and punishment. Parental representations describe references made by the children to the parental characters and are specified as positive, negative and disciplining. The performance of the narrative includes such scales as affects expressed, style of performance, relationship to the examiner and narrative coherence. This study will be one of the first to apply the recently developed coding scheme to a group of non-clinical five year old children whose attachment status at infancy is known.

3.3 RESULTS

3.3.1 Coding reliability

This section divides the analysis of the inter-rater reliability of the story stems derived from the MacArthur Narrative Coding Manual into three sections as is the manual. The first deals with content themes, the second with parental representations and the third with performance codes. Content themes include themes such as aggression, affection, injury and punishment.

One of the performance variables, overall adaptiveness of response, is not part of the original MacArthur Coding Manual and represents a theme added by Dr. Miriam Steele, of the Anna Freud Centre, and Dr. Jill Hodges, of Great Ormond Street Hospital. This scale attempts to assess the extent to which the children demonstrate, either through words or actions, that they understand the conflict embedded within the story stem.

Furthermore, it also attempts to assess the quality of the resolution arrived at by the children to each particular conflict.

Content themes

Eight-six children gave responses to the story stems that contained codeable content themes. These stories were coded by the four raters who were divided into two independent pairs and the inter-rater reliability assessed with Cohen's Kappa. As the range between the two pairs of raters was so low, the median scores of the two pairs of raters are reported.

Six themes (see Table 3.1) could not have Kappas computed either because they were not seen by both raters in each team (competition, sharing, and rivalry) or because not all levels of the theme were seen by both raters in each team (shame, blame, and repetition).

Table 3.1 : Median Cohen's Kappa scores for the inter-rater reliability of the 24 content themes as presented in the manual.

Theme	**Kappa**	**Theme**	**Kappa**
Competition	*	Shame	*
Sharing	*	Affiliation	.35
Rivalry	*	Blame	*
Exclusion	.53	Affection	.82
Aggression	.70	Teasing	.27
Empathy	.67	Dishonesty	.72
Refused empathy	.28	Punishment	.67
Interpersonal conflict resolution	.68	Reparation	.71
Tattling	.77	Verbal conflict	.28
Compliance	.83	Injury	.58
Non-compliance	.79	Atypical response	.79
Escalation of conflict	.21	Repetition	*

The Kappas ranged between .21 - .83. Five themes presented in the manual as presence/absence codes (refused empathy, escalation of conflict, affiliation, teasing and verbal conflict) were seen by both raters in each team but were not reliable. Exclusion was only moderately reliable when rated as a three level theme and is presented in Tables 3.2 and 3.3 below. The remaining twelve themes (aggression, empathy, interpersonal conflict resolution, tattling, compliance, non-compliance, affection, dishonesty, punishment, reparation, injury and atypical response) were reliably coded with a mean Kappa of .73 (range of. 58 to.83). Repetition could not be reliably rated and was seen so few times by the raters (44 times in 946 stories; 4.65 % of the time) that it will be dropped from further analyses.

The complex themes (exclusion, aggression, empathy, interpersonal conflict resolution, shame, blame, punishment, reparation and atypical response) were recoded both as binary themes (ie., present or absent) and as new variables. The latter derived from splitting the categories into separate variables, including the code for 'both' into each of the new variables. For example, aggression was operationalized in the manual as '1' for physical aggression, '2' for verbal aggression and '3' for both. Hence the new variable of physical aggression was created from combining the '1' and '3' codes.

Table 3.2: Median Kappa scores for inter-rater reliability of the complex content themes collapsed to form binary variables.

Binary Theme	**Kappa**	**Binary Theme**	**Kappa**
Exclusion	.71	Shame	.70
Aggression	.74	Blame	.29
Empathy	.67	Punishment	.75
Interpersonal conflict resolution	.72	Reparation	.73
Atypical response	.83		

Table 3.3 : Median Kappa scores for inter-rater reliability of the new variables derived from the complex content themes.

Theme	Kappa	Theme	Kappa
Self exclusion	.83	Shame other	.74
Other exclusion	.74	Shame self	*
Physical aggression	.79	Empathy	.63
Verbal aggression	.01	Helping	.00
Practical reparation	.70	Physical punishment	.84
Guilt reparation	.67	Verbal punishment	.62
Blame other	.17	Positive atypical response	.67
Blame self	*	Negative atypical response	.89

The important result from Table 3.2 is that blame remains unreliable as a binary code. Furthermore, this code remains unreliable when divided into self blame and other blame (Table 3.3) and as such will be dropped from further analyses. Interestingly, shame self is also unreliable (not seen by all raters), hence removing this unreliable component from the binary code increases its reliability. Verbal aggression is unreliable and so is the helping variable which was added to the definition of empathy/helping in the manual by the team. Eleven of the sixteen new variables in Table 3.3 are satisfactorily reliable (self exclusion, other exclusion, physical aggression, practical reparation, guilt reparation,

shame other, empathy, physical punishment and verbal punishment, positive atypical response and negative atypical response) with Kappa's ranging from .62 to .89.

Parental representations

The parental representations data was analysed for inter-rater reliability as above, firstly as presented in the manual, then as binary codes and finally creating new variables according to the representation of parental agency, either as mother or father. Table 3.4 presents the results for the first two analyses and Table 3.5 the agency reliability. Table 3.4 shows that the positive and disciplining themes achieved satisfactory reliability as presented in the manual and also as binary codings, but that the negative representations were not reliable.

Table 3.4 : Median inter-rater reliability for the parental representations manual categories coding and the binary coding.

Parental Representations	**Three by Three Kappa**	**Presence/Absence Kappa**
Positive	.65	.67
Negative	.25	.29
Disciplining	.72	.74

Table 3.5 : Median inter-rater reliability for mother and father representations.

	Mother	**Father**
Positive	.64	.61
Negative	.72	.76
Disciplining	.72	.68

Table 3.5 demonstrates that by recoding the three-way codes, into those where the agency of the parents is either directly stated or implied by the 'both' designation, increases

the reliability of the negative representations substantially. The designation of agency in the children`s narratives can be problematic and given that the ratio of direct assignments of agency to 'both' across the stories was 25 negative/16 both for mothers and 12 negative/16 both for fathers, the negative parental representation code was considered questionable. However the decision was made to retain the use of these codes for future analyses.

Performance themes

Eight-nine children were coded for performance themes. As for the content themes, the performance section was coded by the two pairs of independent raters and the reliability was assessed with Cohen's Kappa, Pearson's R and Spearman's Rho where appropriate.

For ease of presentation the performance section is described in two groups, the performance themes and the affect themes. Performance themes are those themes which attempt to assess the child's overall performance and attitude to both the story telling task and the relationship with the examiner (denial, role of parents, narrative coherence, performance style, responsivity to the examiner, involvement of the examiner, investment in performance and the child`s understanding of the conflict). These performance themes are judged by the rater over all the three phases of the story stem task. The affect themes include scales that attempt to assess the emotional openness of the child during the task (expressions of control, joy, anger, distress, concern, sadness and anxiety). These themes were coded separately for the three phases of the task.

Cohen's Kappa and Pearson`s R were calculated first for the performance themes and are presented in Table 3.6. Two themes, the role of parent (K = .82) and child's understanding of the conflict (K =.68), were reliably coded as complex themes as presented in the manual. The remaining six performance codes (direct vs indirect performance style, child responsivity to examiner, child involvement of examiner, investment in performance, denial and adaptiveness of response) yielded low to moderate Pearson and Cohen's kappa scores.

Table 3.6 : Median inter-rater agreement for the performance codes as presented in the manual.

Rating Scale	**Pearson's r**	**Kappa**	**% Agreement**
Role of parent	.82	.82	88.21 %
Child`s understanding of conflict	.68	.68	87.92%
Direct vs indirect performance style	.47	.42	87.74 %
Child responsivity to examiner	.54	.37	67.60 %
Child involvement of examiner	.55	.47	67.50 %
Investment in performance	.77	.52	57.52 %
Denial	.46	.43	76.05 %
Adaptiveness of response	.46	.32	50.42 %

Five of these themes (child's responsivity to the examiner, child's involvement of examiner, investment in performance, denial and adaptiveness of response) were recoded as new variables and are presented in Table 3.7.

Table 3.7 : Median scores for inter-rater reliability of the complex performance themes collapsed to form new variables.

Rating Scale	**Pearson's r**	**Kappa**	**% Agreement**
Child responsivity to examiner	.51	.47	77.25 %
Child involvement of examiner	.55	.54	76.45 %
Investment in performance	.63	.52	69.00 %
Denial	.49	.48	80.03 %
Adaptiveness of response	.55	.40	62.33 %

By collapsing the complex themes to form new variables, three of the five scales' (child responsivity to examiner, child involvement of examiner and denial) Kappa scores improved yet remained moderate. Investment in performance remained the same (K =.52).

Unlike the previous scales, narrative coherence is not a hierarchical scale but a categorical one. As such inter-rater reliability was calculated using Spearman's rho. It was not possible to calculate reliability for the narrative coherence code before recoding this scale into a new variable as not all raters saw all levels of this scale. After recoding into a new variable it was possible to calculate the reliability shown in Table 3.8.

Table 3.8 : Median inter-rater reliability for narrative coherence.

Rating Scale	**Spearman's rho**	**% Agreement**
Narrative coherence	.50	60.03 %

Although only moderate agreement was reached regarding some of the above scales, they will be retained for future analysis because of the importance of the nature of the scales. Difficulties and suggestions concerning reliability will be discussed at the end of this section.

Affect themes

Table 3.9 presents the Pearson`s r and Cohen's kappa for the affect themes in each of the three phases of the story stem completion task. Kappas could not be calculated for six of the codes (anger in the presentation and transition phase, distress in the transition phase, concern in the narrative phase and sadness in the presentation and transition phases) as they are presented in the manual either because they were not seen by both raters in each team or because not all levels of the theme were seen by both raters. The percentage of agreement between the raters for the majority of the scales is quite high.

Table 3.9 : Median inter-rater reliability for the affect themes as presented in the manual.

Rating Scale	**Pearson's r**	**Kappa**	**% Agreement**
Control (p)	.58	.55	89.06 %
Control (n)	.52	.47	89.47 %
Control (t)	.63	.59	91.58 %
Joy (p)	.58	.46	64.33 %
Joy (n)	.62	.45	63.03 %
Joy (t)	.56	.45	72.62 %
Anger (p)	*	*	97.57 %
Anger (n)	.66	.55	87.04 %
Anger (t)	*	*	99.68 %
Distress (p)	.61	.58	99.38 %
Distress (n)	.58	.61	95.27 %
Distress (t)	*	*	99.56 %
Concern (p)	.52	.48	88.07 %
Concern (n)	*	*	97.93 %
Concern (t)	.85	.83	99.79 %
Sadness (p)	*	*	99.71 %
Sadness (n)	.36	.38	96.86 %
Sadness (t)	*	*	99.88 %
Anxiety (p)	.49	.46	74.52 %
Anxiety (n)	.49	.48	77.46 %
Anxiety (t)	.47	.46	73.60 %

Note: p = presentation phase n = narrative phase t = transition phase

As can be seen in the table above, for some of the scales, concern in the transition phase for example, the Kappa is high and the percentage of agreement is correspondingly high. For others where the Kappa is moderately high or not able to be calculated because the frequencies of occurance are too low, the percentage of agreement still remains high. This is because, although the frequencies were low, the raters did agree a large percentage of the time the few times they did see the theme. For example, distress in the transition phase appeared twice and the raters agreed 99.56 % of the time. These scales were collapsed to form binary variables and the results are presented in Table 3.10. Control and anxiety are already binary codes as presented in the manual.

Table 3.10 : Median inter-rater reliability of the complex affect themes collapsed to form binary variables.

Rating Scale	**Pearson's r**	**Kappa**	**% Agreement**
Joy (p)	.49	.48	74.23
Joy (n)	.55	.55	84.89
Joy (t)	.52	.50	77.88
Anger (p)	.23	.22	98.82
Anger (n)	.64	.64	90.48
Anger (t)	.81	.79	99.90
Distress (p)	.61	.58	99.38
Distress (n)	.67	.64	95.75
Distress (t)	.50	.50	99.67
Concern (p)	.50	.49	88.42
Concern (n)	.13	.15	98.05
Concern (t)	.85	.83	99.89
Sad (p)	*	*	99.71
Sad (n)	.41	.38	96.87
Sad (t)	*	*	99.88

Note: p = presentation phase n = narrative phase t = transition phase

Because of the low frequencies of the affect variables within the separate phases

it was decided to combine the three phases of the narrative. In combining the scales to form binary variables the nature of the data changed and it was no longer possible to use Cohen's Kappa and so Pearson correlations were used.

Table 3.11: Median inter-rater reliability of affect themes when three phases of the narrative task are combined.

Rating Scale	**Pearson's r**
Control	.69
Joy	.67
Anger	.65
Distress	.58
Concern	.52
Sadness	.30
Anxiety	.57

As can be seen, collapsing the three phases generally improved the reliability and further analyses will utilise the affect codes combined across the three phases of the narrative. However, one theme, sadness, was still not reliably rated and so will be dropped from further analysis.

3.4 DISCUSSION OF THE RELIABILITY RESULTS

This section will explore the possible reasons for success and failure of obtaining reliability on the content themes, parental representations and the performance themes and is divided into those areas for which reliability proved poor, moderate and good.

Unreliable themes

First considered are those themes that were not reliably rated by the coders. Eight content themes presented in the manual as binary themes proved to be unreliably coded. The first three content themes (competition, sharing and rivalry), could not have kappa calculated and, as binary themes, this means that they were not seen by both teams of raters. The frequency for each of these was low, which is hardly surprising given that the manual was designed to code the entire range of stems in the MacArthur battery which includes stories which address these issues directly but were not included in this battery. Nonetheless, spontaneous introductions of these themes would be coded but the occurances of these were low and unreliable. Similarly, the other five themes (refused empathy, escalation of conflict, affiliation, teasing and verbal conflict) had very low frequencies. This is a problem with the kappa statistic which is very sensitive to differences when the base rates are extremely low. Escalation of conflict was also rarely seen (15 times out of 946 stories) and was also difficult to code because the operationalisation required a judgement about the initial level of conflict introduced into the stem by the subject. Affiliation is a potentially interesting positive code but again the operationalisation left the judgement about the sense of inclusion too open-ended. That is, the coder had to make a judgement that either everyone participates in an activity or that those that do must give the impression of "a sense of inclusion or belonging". Similarly, the verbal conflict code required the identification of "highly inflected angry verbal remarks" extended beyond a single instance and into a dialogue. Part of the problem with this was the pleasure some children would take in representing arguments, interfering with reliable judgements of 'continued angry inflection'.

The themes of shame and blame were not binary themes and as such the inability to calculate the kappa was due to at least one of the levels not being rated by one of the teams. As Table 3.3 above indicates, blame proved to be unreliably rated both as a binary code and when broken down into the two categories of blame other and blame self. Shame proved somewhat more complicated in that it was reliably rated as a binary variable, however, when broken into the two categories of shame other and shame self only shame self was not reliably rateable.

Only one of the performance themes, an affect code, proved to be unreliable (having Kappa scores of below .40) when recoded as a new variable. The affect themes proved more difficult to rate consistently well when divided into the three phases of the story stem task. This may be due to the fact that decisions about when the three phases began and ended were often difficult to judge, particularly judging when the narrative phase ended and the transition phase began. The frequencies of instances of anger, distress, concern and sadness in the three separate phases was also quite low. This could be due to the non-clinical nature of the sample children. Anger in the presentation and transition phase, distress in the transition phase, concern in the narrative phase and sadness in the presentation and transition phases could not have Kappas calculated. Yet the agreement for these themes being present was a mean of 99.05 % when the theme was seen by the raters. Only sadness proved to be unreliably rated both when considered in each of the three phases and when the three phases of the task were combined. As such sadness will be dropped from further analyses.

Moderately reliable

There are many scales that can be considered to be moderately reliably rated, that is, having obtained Kappa scores of between .40 and .60. One performance scale presented as a binary code in the manual (performance style) was rated moderately reliable (K = .42). Five of the performance scales proved to be moderately reliable when recoded into new variables (child responsivity to examiner, child involvement of examiner, investment in performance, denial and adaptiveness of response) with a mean Kappa of .48 (range of .40 - 54). For example, child's responsivity to the examiner is presented in the manual as a seven point scale ranging from the child being unresponsive to the examiner to the child responding enthusiastically to the examiner. When rated as a seven point scale the reliability is poor. When this code is divided into a three point scale distinguishing between no response, reluctant response and ready or enthusiastic response the reliability is increases to a moderate level. The operationalisation of this scale encouraged the coders to adopt a 'holistic approach' when coding this category which did not clearly distinguish between the different levels of response. Difficulties with the coding of this scale might also be due to confusion as to whether this code is attempting to assess differences between the subject responding to the story stem task or the subject responding to the examiner.

One content theme, that of injury, proved to be moderately reliable. Three of the affect themes proved to be moderately reliable when collapsed across the three phases of the narrative task (distress, concern and anxiety)

Narrative coherence also proved to be moderately reliable. This code is quite an important one, particularly from the view of a communication perspective on attachment

theory and cognitive theory on coherence, and problems with the operationalisation of this scale needs to be addressed. Difficulties arise because the scale attempts to address two main issues at once, that of the coherence of the narative and how the conflict in the story is addressed and the type of resolution that has or has not been reached by the child. Von Klitzing, Kelsay and Emde (1998) have noted similar difficulties and in response to this problem pulled the two aspects apart by transforming the narative coherence code into new scales of 'Embellishment/Addressing the Conflict' and 'Coherence'. This solution seems highly reasonable and the two new scales are recommended for future use of the MacArthur Narrative Coding System.

Adaptiveness of response, which attempts to make subjective assessments regarding the overall adaptiveness of the response, was also moderately reliable. It is much more difficult to obtain good inter-rater agreement with impressionistic assessments of responses because value judgements of what constitutes a good, bad or average response is required.

Reliable themes

Twelve of the content themes were reliable as presented in the manual (exclusion, aggression, empathy, interpersonal conflict resolution, tattling, compliance, non-compliance, affection, dishonesty, punishment, reparation and atypical response). Furthermore, when broken into simpler yet more informative scales a total of seventeen content variables proved reliable (self exclusion, other exclusion, physical aggression, practical reparation, guilt reparation, shame other, empathy, physical punishment, verbal

punishment, interpersonal conflict resolution, tattling, compliance, non-compliance, affection, dishonesty, positive and negative atypical response).

When looking at the performance themes two (role of parent and child's understanding of conflict) were highly reliable as presented in the manual. When the affect themes were collapsed across all three phases of the narrative task three (control, joy and anger) proved highly reliable having kappas that ranged from .65 to .69.

Parental representations proved reliable when broken down into which parent was represented as positive, negative and disciplining. It was decided for ease of analysis and interpretation to use the parental representations variables that proved reliable when coded separately for mother and for father in each of the three categories, that is positive, negative and disciplining categories.

In attempting to develop a systematic and empirically useful coding scheme for clinical interviews Marans et al (1991) raised several points that pertain to the findings described above. On the positive side, even with the complexity and variability of a play interview, agreement as to what general themes the child is conveying can be reached. However, they emphasise that those raters who shared a common theoretical perspective relevant to their task tended to have higher agreement. On the more negative side, they also found that the nature of the operational definitions of the thematic categories sometimes allow for more inferential judgements and less agreement among raters.

Another problem has also been identified by the rating team and that is that the

meaning of an item may change according to the story (Woolgar, 1996). For example, a code of compliance in the 'Exclusion' and 'Headache' stories may represent a pro-social action indicating empathy and respect toward the parents. In contrast, compliance in 'Bathroom Shelf' represents an obedient but not necessarily an empathic way of solving a moral dilemma. This problem has implications for the making of scales across the stories and is addressed in the next section.

3.5 REDUCTION OF DATA

The need to create meaningful aggregates out of the large number of single coding categories has been taken into account in some studies. For example, Warren et al (1996) developed a coding scheme which focused on children's emotionality and self-representations. Woolgar's (1996) reduction of data used only the content and parental representation variables and did not include the potentially important performance and affect variables.

3.5.1 Scaling

To address the need to reduce the data and create reliable aggregates out of the large number of single coding categories, themes from the previous section will be considered for further investigation on the basis of acceptably high levels of inter-rater

reliability having been achieved. In order to justify collapsing the themes across the eleven stories the alpha scores were calculated and are presented below in Tables 3.12, 3.13 and 3.14.

Table 3.12 : Reliable content codes and their aggregate alphas across the 11 stories

Theme		**Theme**	
Interpersonal conflict resolution	.19	Non-compliance	.09
Tattling	.09	Affection	.44
Compliance	.19	Dishonesty	.52
Injury	.13	Shame other	.55
Self exclusion	.30	Guilt reparation	.56
Other exclusion	.62	Physical punishment	.66
Physical aggression	.62	Verbal punishment	.54
Empathy	.00	Negative atypical response	.61
Practical reparation	.21	Positive atypical response	.67

As mentioned, problems concerning the differenct meaning a theme may have, have an effect on the internal consistency of at least two themes above. Compliance and non-compiance can have very different meanings depending in which story they are being used. In total, eight of the aggregate variables derived from the content codes (interpersonal conflict resolution, non-compliance, tattling, compliance, injury, self-exclusion, empathy and practical reparation) did not achieve alpha scores higher than .40 and so will not be included in the factor analysis.

Table 3.13 presents the parental representaions and their aggregate alpha scores.

Table 3.13 : Parental representations and their aggregate alphas across stories

Theme		**Theme**	
Mother		**Father**	
Positive	.48	Positive	.29
Negative	.25	Negative	.15
Disciplining	.49	Disciplining	.41

Of the parental representation codes half failed to score an alpha higher than .40. Only positive and disciplining maternal representations and disciplining paternal representations will be therefore be included in the factor analysis. One of the reasons that two of the three father codes failed to achieve consistency may be due to the fact that mother is the main parental character in the story stems. Father never appears in a story without the mother character, is a peripheral figure in seven of the stories and is not mentioned in three of the stems at all.

Table 3.14 presents the performance and affect codes and their aggregate alpha scores across stories.

Table 3.14 : Reliable performance and affect codes and their aggregate alphas across stories

Theme		**Theme**	
Role of parent	.60	Narrative coherence	.67
Child's understanding of conflict	.58	Control	.94
Indirect vs direct performance style	.96	Joy	.92
Child's responsivity to examiner	.96	Anger	.61
Child's involvement of examiner	.79	Distress	.55
Investment in performance	.91	Concern	.77
Denial	.43	Anxiety	.93

Of the performance and affect codes all their aggregate scores across the eleven stories scored above .40 ranging from .43 - .96. This is explained by the fact that performance and affect themes are not as dependent upon the type of story stem preented as the content and parental representaion codes are.

3.5.2 Factor analysis

Many of these single scales created above may be related to one another and in order to address this and further tackle the task of data reduction, a factor analytic strategy will be adopted. The twenty-seven scales that proved to be both reliably rated and consistent across all eleven stories were factor analysed together. The sorted factors loadings for both the unrotated and varimax rotation analyses are shown below in Tables 3.15 and 3.16. Variables which loaded with an absolute value of 0.50 and above are reported.

Table 3.15 : Sorted factor loadings for the unrotated solution

	Factor 1	**Factor 2**	**Factor 3**	**Factor 4**
Role of parent	.61			
Responsivity to examiner	.72			
Narrative coherence	.74			
Direct vs indirect performance style	.70			
Child's understanding of conflict	.67			
Physical aggression		.61		
Anxiety		-.56		
Disciplining father		.54		
Positive maternal representation		-.54		.50
Verbal punishment			.60	
Investment in performance			-.56	
Disciplining mother			.65	
Affection				.67

Table 3.16 : Sorted factor loadings for the varimax rotation

	Factor 1	**Factor 2**	**Factor 3**	**Factor 4**
Role of parent	.54			
Responsivity to examiner	.78			
Narrative coherence	.72			
Joy	.62			
Direct vs indirect performance style	.74			
Child's understanding of conflict	.73			
Excludes other		.57		
Physical punishment		.53		
Shame other		.56		
Verbal punishment		.74		
Disciplining father		.68		
Disciplining mother		.78		
Negative atypical response			.50	
Physical aggression			.66	
Investment in performance			.68	
Control			.64	
Anxiety			-.53	
Denial				-.54
Positive maternal representation				.73
Affection				.82

The varimax rotation is preferred because of ease of interpretation and will be the one used for future analyses. The extraction of the principle components produced four factors with eigenvalues greater than one, explaining 42.5 % of the original variance.

Approximate percentage of variance for each of the factors is as follows: Factor 1 12.8 %, Factor 2 12.1%, Factor 3 10.2% and factor 4 7.8%.

Cronbach's alpha on the fourth factor indicated that by dropping the negatively loaded denial the internal consistency of the factor would greatly improve. Therefore, denial was taken out of the factor leaving the factor to be comprised of positive maternal representation and affection.

In order to later apply the factors for a story by story analysis, each factor extracted by the varimax rotation was calculated per story and the means, standard deviations and alpha scores are presented below in Tables 3.17 and 3.18.

Table 3.17 : Means, standard deviation, range and Cronbach's alpha per story by factors one (n=89) and two (n=86).

Story	**F1 quality/open response**				**F2 discipline /punishment**			
	Mean	(SD)	Range	∝	Mean	(SD)	Range	∝
Spilled Juice	1.9	(.34)	.67 - 2.33	.46	.28	(.29)	0 - 1.0	.75
Mother's Headache	1.6	(.31)	.67 - 2.33	.55	.12	(.19)	0 - .67	.65
Three's a Crowd	1.7	(.38)	.67 - 2.50	.40	.11	(.17)	0 - .83	.59
Burnt Hand	1.8	(.34)	1.0 - 2.33	.40	.23	(.25)	0 - .83	.72
Lost Keys	1.8	(.33)	.50 - 2.33	.52	.09	(.18)	0 - .83	.74
Sweet Shop	1.6	(.29)	.50 - 2.33	.40	.30	(.23)	0 - .83	.58
Separation	1.6	(.39)	.50 - 2.28	.34	.02	(.08)	0 - .50	.55
Reunion	1.8	(.40)	.50 - 2.28	.63	.04	(.15)	0 - .83	.82
Bathroom Shelf	1.8	(.30)	.50 - 2.33	.60	.18	(.24)	0 - .67	.74
Exclusion	1.7	(.40)	.50 - 2.33	.50	.10	(.19)	0 - .67	.74
Biscuit Tin	1.8	(.39)	.50 - 2.33	.56	.31	(.26)	0 - 1.0	.63
Total	1.8	(.25)	.59- 2.16	.89	.17	(.10)	.02-.45	.60

Table 3.18 : Means, standard deviation, range and Cronbach`s alpha per story by factors three (n=89) and four (n=86).

Story	F3 negative /controlling				F4 positive maternal representation			
	Mean	(SD)	Range	∝	Mean	(SD)	Range	∝
Spilled Juice	.48	(.26)	.20 - 1.33	.35	.04	(.16)	0 -1.0	.79
Mother's Headache	.49	(.23)	.20 - 1.40	.38	.04	(.15)	0 -1.0	.47
Three's a Crowd	.53	(.28)	.20 - 1.50	.51	.08	(.21)	0 -1.0	.39
Burnt Hand	.55	(.30)	.20 - 1.60	.47	.23	(.29)	0 -1.0	.28
Lost Keys	.53	(.30)	.20 - 1.40	.54	.15	(.29)	0 -1.0	.47
Sweet Shop	.59	(.28)	.20 - 1.40	.50	.08	(.21)	0 -1.0	.37
Separation	.57	(.26)	.20 - 1.27	.32	.05	(.17)	0 -1.0	.36
Reunion	.57	(.24)	.20 - 1.40	.19	.24	(.40)	0 -1.0	.85
Bathroom Shelf	.58	(.23)	.20 - 1.40	.26	.25	(.33)	0 -1.0	.40
Exclusion	.57	(.21)	.20 - 1.20	.19	.10	(.25)	0 -1.0	.63
Biscuit Tin	.54	(.25)	.20 - 1.25	.20	.06	(.20)	0 -1.0	.48
Total	.54	(.20)	.20- 1.23	.92	.12	(.12)	0- .50	.55

It can be seen from these tables that the Quality/Open Response factor and the Discipline/Punishment factor have the most consistently high (∝ > .40) alphas when calculated across stories.

Intercorrelations between stories

The tables below show the intercorrelations of each the four factors between the eleven stories. They give information about the likelihood that a child will score high on a certain factor in one story given that he or she scores high on the same measure in another story.

Table 3.19 shows the intercorrelations between the eleven stories for the first factor quality/open response (composed of the variables role of parent, responsivity to examiner, narrative coherence, joy, direct vs indirect performance style and the child's understanding of the conflict). The correlations are relatively high ranging from .23 - .69.

Table 3.19 : Intercorrelations between the eleven story stems for factor 1, quality/open response to task.

	F1 SJ	F1 MH	F1 3C	F1 BH	F1 LK	F1 SS	F1 SN	F1 RN	F1 BS	F1 EX	F1 BT
F1 SJ											
F1 MH	.49										
F1 3C	.45	.50									
F1 BH	.31	.36	.28								
F1 LK	.39	.49	.42	.43							
F1 SS	.42	.29	.34	.45	.58						
F1 SN	.31	.36	.30	.32	.44	.48					
F1 RN	.43	.34	.23	.42	.53	.47	.58				
F1 BS	.44	.48	.28	.53	.57	.56	.69	.68			
F1 EX	.35	.28	.23	.38	.35	.41	.55	.61	.65		
F1 BT	.33	.28	.28	.38	.45	.46	.58	.63	.67	.58	

The intercorrelations of the eleven stories which involve the second factor, that of discipline and punishment (composed of the variables excludes other, physical punishment, shame other, verbal punishment and representations of a disciplining mother and father) are shown below in Table 3.20. They tend to be much lower than for the first factor. The range is from -.02 - .29 with one exception. The correlation between story 7, separation, and 8, reunion is quite high at .61.

Table 3.20: Presents the intercorrelations between the eleven story stems for factor 2, discipline/punishment.

	F2 SJ	F2 MH	F2 3C	F2 BH	F2 LK	F2 SS	F2 SN	F2 RN	F2 BS	F2 EX	F2 BT
F2 SJ											
F2 MH	.29										
F2 3C	.12	.23									
F2 BH	.11	.13	-.05								
F2 LK	.18	.06	.13	.16							
F2 SS	.15	.10	.08	.29	-.07						
F2 SN	.15	.12	.05	.09	.22	-.09					
F2 RN	.25	.18	.15	.12	.13	.07	.61				
F2 BS	.21	.13	.22	.08	.02	-.05	.20	.00			
F2 EX	.06	.17	.04	.12	-.14	.09	-.02	.00	.06		
F2 BT	.27	.15	.17	.20	.08	.20	.16	.16	.18	.22	

Table 3.21 presents the intercorrelations of the third factor (composed of variables negative atypical response, physical aggression, investment in the performance, control and a lack of anxiety). The range for this factor tends to be quite high, from .33 - .70.

Table 3.21: Presents the intercorrelations between the eleven story stems for factor three, negative/controlling.

	F3 SJ	F3 MH	F3 3C	F3 BH	F3 LK	F3 SS	F3 SN	F3 RN	F3 BS	F3 EX	F3 BT
F3 SJ											
F3 MH	.61										
F3 3C	.45	.68									
F3 BH	.70	.64	.62								
F3 LK	.50	.50	.59	.66							
F3 SS	.46	.51	.49	.67	.65						
F3 SN	.47	.48	.47	.54	.51	.60					
F3 RN	.35	.49	.41	.50	.54	.56	.70				
F3 BS	.33	.42	.51	.51	.64	.58	.68	.63			
F3 EX	.41	.45	.45	.42	.39	.55	.50	.48	.55		
F3 BT	.43	.63	.43	.51	.43	.57	.59	.62	.54	.50	

Factor four, Table 3.22 below, composed of the variables affection and positive maternal representation, correlates at a relatively low level with a range of -.02 - .55.

Table 3.22: Presents the intercorrelations between the eleven story stems for factor four, positive maternal representation.

	F4 SJ	F4 MH	F4 3C	F4 BH	F4 LK	F4 SS	F4 SN	F4 RN	F4 BS	F4 EX	F4 BT
F4 SJ											
F4 MH	-.05										
F4 3C	.08	.09									
F4 BH	.19	.22	.17								
F4 LK	-.04	.15	.18	.02							
F4 SS	.49	-.09	.04	.12	.09						
F4 SN	-.06	-.07	.12	-.00	-.04	-.12					
F4 RN	.17	-.14	.44	.12	.22	.10	.28				
F4 BS	.10	.06	.25	-.07	.10	.28	.07	.30			
F4 EX	-.08	.30	.01	.29	.12	-.04	.21	-.03	-.08		
F4 BT	.10	-.07	.01	.00	.55	.21	-.09	.05	-.02	-.07	

The intercorrelations of the stories for the factors described as 'quality/open response' and 'negative/controlling' tend to higher than for those of the factors described as 'positive maternal representation' and 'discipline/punishment. The first two involve the performance data whereas the second two mostly involve the content themes and parental representations. It is possible that a child's performance style tends to be similar across all the story stems while the themes and representations tell us more about the type of story stem used to elicit this narrative. For example, a child's score on 'positive maternal representation' does not tend to be highly correlated with their 'positive maternal

representation' score on any other story. This might suggest that the themes of affection and positive maternal representations are more related to a specific story stem than indicative of the internal world of the child who told the narrative.

Creation of Scales from the factor scores

Scales from the factor scores were then created by aggregating the variables which loaded with absolute values greater than 0.50 and retaining the sign of the loading. Table 3.23 presents the variable composites of each of the scales and their Cronbach's alphas summed across the eleven stories.

Table 3.23 : The composition of the four factor scales

Factor 1 Quality/open response	Factor 2 Discipline and punishment	Factor 3 Controlling and negative	Factor 4 Positive maternal representation
responsivity to examiner + direct vs indirect performance style + child's understanding of conflict + narrative coherence + joy + role of parent	disciplining mother + verbal punishment + disciplining father + excludes other + shame other + physical punishment	investment in performance + physical aggression + control + negative atypical response - anxiety	affection + positive maternal representation
= .76	= .74	= .50	= .58

Lack of anxiety may seem strange at first until one considers that the children's apparent lack of anxiety may be being enacted in the controlling and aggressive behaviour and responses.

In conclusion, the data reduction section demonstrates that a set of reliable and consistent scales could be produced which could, in turn, be aggregated across all stories and then, that these scales could themselves be aggregated on the basis of factor analysis to form interpretable constructs with high internal consistency. Hence, the psychometric properties incomplete in previous research were addressed.

The subsequent chapters will employ the four new factor scales in relation to the children's responses on the MacArthur Story Stem Battery.

CHAPTER FOUR

THE EFFECTS OF DEMOGRAPHIC FACTORS ON THE CHILDREN'S RESPONSES TO A NARRATIVE TASK

4.1 INTRODUCTION

Chapter Three responded to a need for more detailed psychometric information regarding the MacArthur Story Stem Battery and the accompanying coding system, the MacArthur Narrative Coding Scheme. While the MacArthur Story Stem Battery is a most promising method for investigating aspects of the young child's internal world it is also a complex method and many elements need to be teased out in order to make sense of it. In the literature describing the few studies with story stems there has been a call for much needed information regarding descriptive data within different samples (von Klitzing, Kelsay & Emde, 1998). In an attempt to provide some of this much needed information and clarification about the story stem task, this chapter begins the exploration by examining the possible effects of such influencing factors of demography as age, language abilities and gender upon the children's responses to the story stem battery. Parent's and children's age, parent's and children's expressive language abilities and parent's level of education, social class and child's temperament will be considered.

4.1.1 Age

Children as young as three years of age have been able to be cooperative and productive in responding to the story stem task and have produced meaningful responses to the stories that probed for empathic, prosocial responses to moral dilemmas and affectively charged scenarios (Buchsbaum & Emde, 1990). By the early school years boys and girls across social classes have acquired a basic, common vocabulary for describing internal states

and evidence of the use of multiple narrative structures has been found in the spontaneous stories of four-year old children (Tarullo, 1994; Hudson, Gebelt, Haviland & Bentivgna, 1992). When looking at five-year-old children's narratives it has been found that they are more differentiated and detailed in their depictions of family members than three-year-olds (Bretherton, Prentiss & Ridgeway, 1990). As the children this sample are five years of age and, consequently, have more experience with language and narratives than three-and-four year-olds, it is expected that they will be able to produce coherent and meaningful stories about the dilemmas and conflicts presented to them in the story stems. Although the differences in the ages of the children participating in this study is small, development moves at a fast rate in young children, and it is possible that the older children will produce narratives that are of a higher quality and more open than the younger children. There is no prediction made regarding the effect of parental age upon the outcome of the narrative task.

4.1.2 Language

With regard to language, several studies which have quantitatively studied the MacArthur Story Stem Battery have controlled for children's language use because it is possible that children's language ability will influence the type of responses given (Oppenheim, Emde & Wambolt, 1996; Oppenheim, Nir, Warren & Emde, 1997; Warren, Oppenheim & Emde, 1996). One of the studies looking at children's representations of their mothers' in the story stems found one moderate correlation between expressive language and positive representations of mother at age 5 years (Oppenheim, Emde & Warren, 1997). Another found moderate correlations between expressive language (as measured by the

expressive One-word Picture Vocabulary Test) and a few story stem variables such as coherence and aggression but no correlations for themes such as directness of style, investment in performance, prosocial themes and relatedness to the examiner (Oppenheim, Nir, Warren & Emde, 1997). The current study also makes use of an expressive language assessment which seems appropriate given that it is particularly the children's expressive language skills that are being utilized in this task. The potential effects of both the children's and the parent's expressive language ability (assessed before the birth of the target child) will be investigated. It is predicted that children scoring high on the expressive language assessment will produce stories that are of a higher quality and are more open than children who score low on the language assessment. No formal predictions will be made with regard to the other three factor scales.

4.1.3 Infant Temperament

The main categories classifying child temperament have been derived from interviewing parents about their concerns regarding their infant's development, resulting in three dimensions; these are ease of handling, difficult to manage and slow to warm up (Thomas & Chess, 1977). The last of these, slow to warm up, is a measure of inhibition and has been found to be especially persistent into late childhood when classified after the first birthday, although signs of it can be observed at about eight months (Kagan, 1984). In a study of three-year-olds and a story completion task using five stories similar to the ones used in this study, correlations between sociability and shyness scales (as measured by the Colorado Child Temperament Inventory) filled out by mother at 18 months were found;

sociability relating positively and shyness relating negatively to the story scores (Bretherton, Ridgeway & Cassidy, 1990). It is therefore, predicted that those children scoring higher on the temperament measure, meaning that they are more difficult/inhibited, will have lower quality stories and less open responses than children not judged difficult/inhibited by their parents.

4.1.4 Social class

Reports of studies using the story stems have mainly used populations of middle-class families and have not reported on the associations of the children's responses with social class. It is difficult to predict how social class might be related to the outcome of the children's stories, however, literature pertaining to internalization of parental values might be relevant to this question. For example, lower socioeconomic status parenting is associated with rigidity, power-assertive styles of discipline, lower warmth and affection and less verbal interaction with children (MacDonald, 1997). This being the case, it is possible that children whose parent's are from the lower social class group might tend to have more themes of discipline and punishment in their stories and fewer themes of positive maternal representations. However, given that the subjects in this study are overwhelmingly from upper and middle socioeconomic classes, no predictions are made with regard to the effect of social class on the narrative task.

4.1.5 Gender

Some gender differences, in aggression for example, are well attested cross-culturally.

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Some gender differences, in aggression for example, are well attested cross-culturally.

Those researchers studying gender differences agree that boys and girls seem to be speaking in different voices about different ways of experiencing the world yet these dimensions have proven difficult to capture in experimental situations and rarely translate into significant differences in groups means (Tarullo, 1994). For most socioaffective measures, boys and girls will look more alike than different on average, aggression being a notable exception (Tarullo, 1994). In the only study to report on gender differences and the story stems, some differences were found between boys and girls (Oppenheim, Nir, Warren & Emde, 1997). At age four-and-a-half girls were identified as having more prosocial themes and fewer aggressive themes than boys but these differences were not found at age five. At both age 4½ and 5½ girls had higher relatedness to the examiner and a more direct style than boys but there were no differences found between genders for investment in performance or on their expressive language abilities. As a result of the findings from the above studies, it is predicted that no gender differences will be found in this sample of five-year-olds on the four story stem factors. Because so little information has been reported in the literature about story stems and gender differences a post hoc analysis of the individual variables will be conducted. As the exception, it is expected that boys' narratives will contain more instances of aggression than the girls. There is no expectation in either direction for the remaining themes coded for.

4.2 METHOD

4.2.1 Design

The parent's demographic variables were collected during the last trimester of the

target children's pregnancy in Phase I of the London Parent Child Project. The original sample consisted of a group of 100 cohabiting parents who were recruited prior to the birth of their first child. The parent's expressive language ability was assessed during the first prenatal visit using the Short Form of the Mill Hill Vocabulary Scales, designed and validated by Raven et al (1986) (see Appendix B.1). The MacArthur Story Stem Battery (Appendix A.1) and the Bus Story test (Renfrew, 1991) (Appendix B.3) was administered to the five year old children during the first visit of Phase III of the London Parent-Child Project. The MSSB has been described in detail in Chapter Three.

4.2.2 Subjects

Mothers

The original sample (n = 100) of mothers turned out to be mainly an older group of first-time mothers, well-educated, white and predominantly middle-class; 70 of the women held university degrees and all 100 had attended secondary school at the time of recruitment. The expectant mothers' median age was 31 years (range of 22 - 42). Seventy-five of the women were born in England, 10 in Scotland or Ireland while 15 were born outside the UK or Ireland. This latter group was primarily Western and Anglo-Saxon; six from the British Commonwealth countries of Australia, New Zealand and Canada, two from the United States, one from South Africa, four European with only the remaining two from non-Western cultures. Eighty-two of the woman were married to the expectant father at the time of recruitment or married subsequently. At the prenatal assessment, the median length of residence together with the expectant father was 5 years (range 1-19). Twenty-one of the woman represented social class I (professional and managerial); 65 social class II

(intermediate occupations); 9 social class III (skilled occupations), and 5 social class IV (partly skilled occupations) according to the criteria of the UK government Office of Population Censuses and Surveys (1980). Sixty-five of the women were in the middle-income group, 21 in the upper income group and 14 in the lower income group.

Fathers

Like their female partners, the sample of expectant fathers (n=100) constituted a highly homogeneous educated, middle and upper-middle class group. Seventy-one were university educated, only one had no further education at the time of recruitment. Their median age was 33 (range 20-57). Eighty-seven of the expectant fathers were from England, five were from Scotland or Ireland and eight were born outside the UK, though none of these countries being markedly different cultures. Twenty-five of the men represented social class I (professional and managerial); 57 social class II (intermediate occupations); 16 social class III (skilled occupations); and 2 social class IV (partly skilled occupations), according to the criteria of the UK Government Office of Population Censuses and Surveys (1980). In terms of the income groups referred to above for the mothers, 60 of the men were in the middle income group, 24 in the upper income group and 16 in the lower income group (see also Steele, H., 1991; Steele, M., 1990; Fonagy, Steele & Steele, 1991).

Children

Ninety-two children returned with their parents for the third phase of the Project and eighty-nine actually completed the story stem battery and the Bus Story test. Forty-three of the sample children are girls and forty-nine boys. The mean age of the children was 61

months (range 59 - 65 months). The mean ages of the boys and girls did not differ significantly (girls mean age 61.3 months; boys mean age 61.1 months).

4.2.3 Procedure

As stated, the parent's expressive language ability was assessed using the Short Form of the Mill Hill Vocabulary Scales. The variable scores the number of words both correctly defined and used appropriately in sentences, yielding a single continuous score of verbal skill (Appendix B.1).

The children's temperament was assessed at twelve months using the Infant Characteristics Questionnaire (Bates, Freland & Lounsbury, 1979; see Appendix B.2). This instrument asks parents to rate how difficult they perceive their infant to be relative to the average child. The validity of this instrument has been well-established throughout the first year of life. Both mothers and fathers independently completed the questionnaire which summed to yield a global assessment of the parents' perceptions of their child's 'difficultness'.

The Bus Story test (Appendix B.3) was presented to the children following the administration of the Modified Strange Situation and the MacArthur Story Stem Battery. The Bus Story test is a measure of performance on standardized language responses (Bishop and Edmundson, 1987). It involved showing the child a series of colour sketches portraying the adventures and calamities that befall a bus. When the tester finished telling the 'bus

story' the child was invited to retell the story with resort to only the pictures. The child's narrative response was audio-recorded and transcribed verbatim for subsequent scoring in terms of three dimensions: 1) average sentence length, 2) average number of subclauses used per sentence and 3) quality of information. These three scales were then summed to provide a Bus Story aggregate, reflecting a robust measure of early language development in both the receptive, and particularly, the expressive modes. The test for preschool age children has been in continuous over the last twenty years in the United Kingdom and there are validity results showing the test to be uniquely successful in predicting language delays in school age children (Renfrew, 1991).

4.3 RESULTS

The results are described in two main sections. The first section considers the parent's and children's age in relation to the responses of the story stems. Next considered is the four factors or dimensions of the children's story stem responses as possibly related to language abilities of both parents and children and the educational level of the parents just prior to the birth of the child. This is followed by descriptions of the correlations of infant temperament with children's responses at age five on the narrative task. Finally in this first section, are the results of parent's social class in relation to the four story stem factors. The second section deals in detail with the possible effects of child's gender upon their responses to the narrative task.

4.3.1 Age

Table 4.1 below shows the correlation coefficients and the levels of significance of child's age, mother's age and father's age with the four factors of the children's responses to the story stems.

Table 4.1 : Bivariate correlations and levels of significance of mother's, father's and children's age and the four story stem factors.

	Correlation Coefficients (p)			
	mother's age	**father's age**	**children's age**	**N**
Quality/open response	-.004 (.97)	-.143 (.18)	.087 (.41)	89
Discipline/punishment	-.023 (.83)	-.014 (.89)	.128 (.23)	86
Controlling/negative	.135 (.21)	.025 (.81)	-.165 (.12)	89
Positive maternal representation	.035 (.75)	-.000 (.99)	-.050 (.64)	86

Note : r values are Pearson correlations with the significance levels in

parentheses ; p values are based on two-tailed tests

Table 4.1 above indicates that there are no significant correlations between either child's age or parent's age and the four factors of the children's responses to the MacArthur Story Stems.

4.3.2 Expressive language and level of education

In order to explore the possibility of expressive language abilities of the children and their parent's affecting the results a correlational analysis of these variables was undertaken. Similarly, a correlational analysis was conducted to investigate the possibility of an influence

of the parents' level of education.

The data for the children's expressive language, as measured by the Bus Story test, is interval data and so the Pearson correlation was used. Table 4.2 below shows the correlation coefficients and levels of significance of the aggregate Bus Story score as well as the three sub-scales of sentence length, number of clauses and the quality of the information provided with the four factors derived from the MacArthur Narrative Coding Scheme (as described in Chapter Three).

Table 4.2 : Bivariate correlations and levels of significance for the Bus Story scales and the four story stem factors.

	Correlation Coefficients (p*)				
	Bus Story	**Sentence length**	**Clauses**	**Quality of info**	**N**
Quality/open response	.108 (.31)	.134 (.22)	.108 (.33)	.153 (.16)	89
Discipline/punishment	.164 (.13)	.000 (.99)	.124 (.26)	.196 (.07)	86
Controlling/negative	-.039 (.71)	.003 (.97)	.049 (.65)	-.054 (.62)	89
Positive maternal representation	.113 (.29)	.161 (.14)	.164 (.14)	.082 (.46)	86

Note : r values are Pearson correlations with the significance levels in parentheses;
p values are based on two-tailed tests

It can be seen from Table 4.2 that there are no significant associations between the children's language abilities on any of the scales of the Bus Story test and the four factors derived from the MacArthur Narrative Coding System of the story stems. There is one trend reported between the Discipline/Punishment factor and one of the sub-scales, quality of information. However, as it is a trend and the aggregate Bus Story score is not significant,

the effects of language will not be controlled for in any further analyses of the data.

The data for the parent's expressive language and educational level is ranked data and so Spearman's rho was used to calculate the correlations of parent's expressive language and educational level with the four factors. Table 4.3 below shows the correlation coefficients and the levels of significance for these calculations.

Table 4.3 : Correlations and levels of significance for parents' expressive language and education level with the four story stem factors.

	Correlation Coefficients (p)				
	Expressive language		**Education level**		**N**
	mother	**father**	**mother**	**father**	
Quality/open response	.165 (.12)	-.072 (.50)	.081 (.44)	.156 (.14)	89
Discipline/punishment	-.152 (.16)	-.017 (.87)	.006 (.95)	-.071 (.51)	86
Controlling/negative	-.000 (.99)	-.074 (.48)	-.154 (.14)	-.055 (.60)	89
Positive maternal representation	.009 (.93)	-.142 (.18)	-.046 (.67)	-.040 (.71)	86

Note : r values are Spearman's rho correlations with the significance levels in parentheses; p values are based on two-tailed tests

As can be seen in Table 4.3, there are no significant correlations.

4.3.3 Infant temperament

As stated, infant temperament was rated separately by mother and father using the

Infant Characteristics Questionnaire. Table 4.4 below shows the Pearson correlations of the four story stem factors with both mother`s and father`s ratings of the child`s temperament at one year.

Table 4.4 : Correlations and levels of significance of infant temperament and the story stem factors.

	Correlation Coefficients (p)		
	mother's rating	**father's rating**	**N**
Quality/open response	-.093 (.38)	-.034 (.75)	89
Discipline/punishment	.041 (.70)	.195 (.07)	86
Controlling/negative	.068 (.52)	.064 (.54)	89
Positive maternal representation	-.024 (.82)	.074 (.49)	86

Note : r values are Pearson correlations with the significance levels in parentheses;
p values are based on two-tailed tests

Again, there are no significant correlations for either mother's or father's rating of infant temperament with any of the factors. There is one trend noted between the Discipline/Punishment factor and father's rating of infant temperament, however, they are not significant and will not be controlled for in future analyses.

4.3.4 Parent's social class

The possible effects of the parent`s social class on the children`s responses to the story stems was considered next. Because the social class data is measured on an interval scale, the scores are evenly distributed and there is homogeneity of variance a one-way analysis of variance was conducted to examine this question. Because Group III, those of

skilled occupations, and Group IV, those of partly skilled occupations, contained too few members (8 and 3 respectively) to make the statistical analysis reliable in both the mother and father samples these two groups were combined into one group (Group III below) containing those whose occupations are skilled and partly skilled. Levene's test for homogeneity of variances was observed and seen not to be significant.

Table 4.5 below considers the possible effects of the mother's social class on the children's responses to the story stems and shows the means, standard deviations, degrees of freedom and the f-ratio and f-probabilities of the factor scores grouped by mother's social class.

Table 4.5 : Means and SDS of factor scores grouped by three classifications of mother's social class.

Factor	**Means (SD)**			**df**	**f-ratio**	**f-prob**
	I	**II**	**III**			
Quality/open response	1.8596 (.15)	1.7507 (.28)	1.7502 (.19)	2,84	1.41	.24
Discipline/punishment	.1652 (.08)	.1641 (.10)	.1804 (.10)	2,81	.12	.87
Controlling/negative	.5043 (.16)	.5363 (.18)	.6248 (.29)	2,84	1.38	.25
Positive maternal representation	.1386 (.14)	.1089 (.10)	.1694 (.12)	2,81	1.38	.25

Note: p values are based on two-tailed tests

Table 4.5 indicates that there is no significant effect of mother's social class on the either of the four factors. Scheffé's post hoc test was not observed in this case as there are no significant main effects.

A one-way analysis of variance was also conducted for the father's social class to consider the possible effects of the paternal social class on the children's responses to the story stems. Table 4.6 below shows the means, standard deviations, degrees of freedom and the f-ratio and f-probabilities of the four factor scores grouped by father's social class.

Table 4.6 :Means and SDSs between factor scores grouped by three classifications of father's social class

Factor	**Means (SD)**			**df**	**f-ratio**	**f-prob**
	I	**II**	**III**			
Quality/open response	1.8581 (.16)	1.7603 (.24)	1.7096 (.36)	2,84	1.80	.17
Discipline/punishment	.1481 (.08)	.1576 (.09)	.2212 (.11)	2,81	3.11	.04*
Controlling/negative	.4875 (.15)	.5452 (.18)	.5968 (.26)	2,84	1.49	.23
Positive maternal representation	.1612 (.14)	.1054 (.10)	.1273 (.11)	2,81	1.66	.19

Note: * $p \leq .05$ (p values are based on two-tailed tests two-tailed)

Table 4.6 above indicates that, unlike mother's social class, there is an effect of father's social class on the children's responses. Discipline/punishment is related to father's social class at a level of $p = .04$. Scheffé's post hoc test was observed and confirmed that no two groups are significantly different at the $p \leq .05$ level. As a result of this analysis father's social class will be controlled for in future analyses involving the Discipline/Punishment factor.

4.3.5 Gender

As mentioned in the introduction to this chapter, for most socio-affective measures

boys and girls will look more alike than different on average, aggression being the notable exception. This section will examine the issue of gender differences in some detail and will look at the possibility of an association between gender and the children's responses on the narrative task.

To first explore the question of whether there were differences between the boy's and girl's expressive language ability which might affect the type or quality of their narrative responses, independent sample t-tests were calculated. Levene's test for the equality of the variance was observed and the significance levels for equal groups was used as indicated. The association between gender and each of the four scales of the Bus Story was tested (see Table 4.7 below).

Table 4:7 : Means, T scores and levels of significance for the Bus Story scales grouped by gender.

	Means (SD)		**df**	**t-value**	**p**
	Girls	**Boys**			
Bus Story	40.32 (9.84)	39.89 (9.61)	98	.22	.82
Sentence length	11.23 (2.45)	10.64 (2.13)	82	1.17	.24
Clause	1.02 (.87)	1.22 (.90)	82	1.01	.31
Quality of info	28.23 (8.83)	27.93 (8.28)	82	.16	.87

Note: p values are based on two-tailed tests; standard deviations are in parentheses

The results obtained show that no significant differences were found between girls' and boys' expressive language ability.

To explore the question of gender and the children's responses on the MacArthur

Story Stem Battery independent sample t-tests were calculated to determine if the boy's responses differed from the girl's on any of the four factors. Levene's test for the equality of the variance was observed and the significance levels for equal groups was used as indicated. The association between gender and each of the four factors derived from the factor analysis of the MacArthur Narrative Coding System was tested (see Table 4.8 below). Significance levels reported are based on two tailed tests as there is no a priori hypothesis regarding gender differences in relation to the factor scales.

Table 4.8 : Means, SDS and levels of significance by gender for the four story stem factors.

	Means (SD)		**df**	**t-value**	**p**
	girls	**boys**			
Quality/open response	1.8011 (.21)	1.7546 (.28)	87	.86	.39
Discipline / punishment	.1542 (.08)	.1746 (.10)	84	.98	.33
Negative / controlling	.5131 (.19)	.5669 (.19)	87	1.30	.19
Positive maternal representation	.1443 (.12)	.1067 (.10)	84	1.48	.14

Note: p values are based on two-tailed tests and standard deviations are in parentheses

The results obtained in Table 4.8 show that no significant differences were found between gender and the four factors.

Because very little work has been published on the question of gender differences in relation to the story stems it was decided to explore this area in more detail by conducting a post hoc analysis examining the individual variables in relation to gender. An additional reason is that some of the variables which were reliably coded were not included in the factors as a result of the factor analysis. Some work has been done regarding content themes

and gender but none regarding the performance and affect themes (Woolgar, 1996). As the literature about children's play themes in general has suggested that particular themes such as aggression and prosocial responses might be affected by gender it is predicted that some variables, such as aggression, empathy and helping, might be affected by gender.

Those variables which proved reliable were aggregated across the stories. Only those variables with internal consistency, that is, having alphas higher than .40, were used in the following analysis (as described in Chapter 3). Independent t-tests were conducted and the significance levels reported are based on two-tailed tests as there is no a priori hypothesis regarding the majority of the variables. Table 4.9 below indicates the results of the independent sample t-tests for each content and parental representation variable by gender. The performance variables will follow.

Table 4.9 : Means, SDS and levels of significance for the content and parental representation variables grouped by gender (n=86).

Variable	**Means (SD)**		**df**	**t-value**	**p**
	Girls	**Boys**			
Affection	.1364 (.15)	.0949 (.12)	84	1.39	.16
Dishonesty	.0977 (.11)	.1087 (.12)	84	.41	.68
Guilt/reparation	.0591 (.09)	.0316 (.08)	84	1.45	.14
Negative atypical response	.0349 (.08)	.0838 (.13)	75.78	2.12	.03*
Excludes other	.1045 (.12)	.1601 (.17)	80.36	1.74	.08
Physical aggression	.0614 (.11)	.1798 (.16)	79.91	4.05	.000***
Positive atypical response	.0578 (.10)	.0672 (.09)	84	.44	.66
Physical punishment	.0568 (.11)	.1206 (.14)	84	2.26	.02*
Disciplining father	.0795 (.07)	.1364 (.12)	74.02	2.55	.01**
Disciplining mother	.2955 (.14)	.2648 (.18)	84	.85	.39
Positive mother	.1523 (.13)	.1186 (.11)	84	1.23	.22
Excludes self	.0909 (.08)	.0810 (.10)	84	.48	.62
Shame other	.1136 (.12)	.1087 (.14)	84	.17	.86
Verbal punishment	.2750 (.15)	.2569 (.18)	84	.48	.63

Note : * p≤ .05 ** p ≤ .01 *** p ≤ .001
p values are based on two-tailed tests

As can be seen from the above table (Table 4.9), there are four content and parental representation variables that signify differences between the boys and the girls across the eleven stories. Unsurprisingly, physical aggression was seen more in the responses of boys (mean = .1798, sd =.16) than girls (mean = .0614, sd =.11). Boys also gave more representations of a disciplining father (mean = .1364, sd =.12) than girls (mean = .0795, sd=.07) and enacted more instances of physical punishment (mean = .1206, sd =.14) and negative atypical responses (mean =.0838, sd =.13) in their story completions. There is also a trend for boys (mean =.1601, sd =.17) to use the theme of 'excludes other' more than girls

(mean =.1045, sd =.12).

Table 4.10 below presents the results of the independent t-tests for the performance variables grouped by gender.

Table 4.10 : Means, SDS and levels of significance for the performance variables by gender (n=89).

Variable	**Means (SD)**		**df**	**t-**	**p**
	Girls	**Boys**			
Role of parent	1.8337 (.38)	1.7670 (.50)	87	.69	.49
Child's understanding of conflict	1.0665 (.11)	1.0341 (.18)	87	.98	.32
Directness of performance style	1.9290 (.18)	1.8636 (.31)	76.94	1.21	.23
Responsivity to examiner	2.7184 (.43)	2.7064 (.47)	87	.12	.90
Involvement of examiner	1.4279 (.27)	1.4545 (.29)	87	.44	.66
Investment in performance	2.2106 (.70)	2.1913 (.67)	87	.13	.89
Denial	.2550 (.16)	.3030 (.17)	87	1.34	.18
Adaptiveness of response	1.8359 (.42)	1.5966 (.31)	87	3.02	.003*
Narrative coherence	2.7517 (.48)	2.6477 (.55)	87	.94	.35
Control	.0887 (.17)	.1282 (.22)	87	.91	.36
Joy	.5070 (.26)	.5088 (.24)	87	.03	.97
Anger	.0717 (.06)	.0436 (.04)	87	2.32	.02*
Distress	.0259 (.04)	.0234 (.03)	87	.29	.77
Concern	.0466 (.07)	.0423 (.05)	87	.30	.76
Anxiety	.6245 (.26)	.5688 (.29)	87	.94	.34

Note : * p≤ .05 ** p ≤ .01 (p values are based on two-tailed tests)

When looking at the performance variables, Table 4.10 above shows that only two

variables show significant differences between the boys and girls. Rather surprisingly, girls expressed more anger in their stories (mean = .0717, sd =.06) than boys (mean = .0436, sd =.04). They were also judged to have significantly higher adaptive responses to the story stem task (girls mean = 1.8359, sd =.42; boys mean =1.5966, sd =.31).

4.4 DISCUSSION

This chapter undertook to examine the effect of various demographic variables upon the children's responses to the MacArthur Story Stem Battery task. There are several points mentioned in the results section of which to take note here.

The possibility that the older children would produce narratives of a higher and more open quality proved not to be the case; there was no correlation between the age of the children and their responses on the narrative task. The results showed that there was also no effect of either parents' age on the child's responses nor was there an effect of either parents' education level on the results. This result is not surprising in view of the fact that the vast majority of parents are university educated.

As mentioned in the introduction, other studies of similarly aged, middle-class children found significant associations between the child's language abilities and the story stems. In this sample of children there were no significant correlations between either the children's or the parent's language abilities with any of the four factors derived from the

children's responses on the narrative task. It is possible that the lack of associations of children's expressive language abilities to the factors is due to the fact that this study used a different instrument to assess language ability and that it is not as sensitive to expressive language issues as those used in the studies mentioned. It is also possible that differences in the children's scores are not large enough and could be explained by the relative homogeneity of this sample. Due to the non-significant result, subsequent analyses of these story stem factors will not control for child or parent language abilities.

Infant temperament was rated by the both parents independently of each other and neither parents' rating proved to be associated with the story stem factors. The above findings lend evidence to support the conclusion that the story stems the children produce are not a factor of their language abilities, their age or their temperament.

There was one significant result regarding associations between the parents' social class and the story stem factors. Mothers' social class had no associations to any of the factors, however, father's social class was related to one of the factors. Those fathers belonging to the group of occupations defined as skilled or partly skilled were found to have children who referred to more themes of discipline and punishment in the narratives. This corresponded to predictions made for the Discipline/Punishment factor but not for the Positive Maternal Representation factor. The Discipline/Punishment scale includes less harsh forms of discipline such as verbal punishment, however, it also includes harsher styles such as physical punishment, shaming the other and excluding the other. The positive result may be explained by the literature mentioned, that lower socioeconomic status parenting is

associated with power-assertive styles of discipline. Also, studies investigating the socialization features associated with low socioeconomic status highlight harsh or coercive discipline, lack of maternal warmth, lack of social support and aggressive adult models (Dodge, Pettit & Bates, 1994).

With regard to gender, there were no associations between gender and the children`s expressive language any of the four scales derived from the MacArthur Narrative Coding System indicating that the boys and girls were not significantly different to each other in terms of their language abilities.

There were also no significant associations between gender and the four factor scales, however, the post hoc analysis revealed several significant findings when the individual variables of the story stem battery were examined with respect to gender. As was expected, there was a strong indication that boys described more instances of physical aggression in their stories than girls. Boys also showed more negative atypical responses, physical punishment and representations of a disciplining father. This indicates that there are differences in the thematic content of boys` and girls' narratives.

The picture is different when it comes to the performance variables: there is very little difference between the boy and girls. Girls were judged to have given more overall adaptive responses than boys. This dimension attempts to assess the extent to which the child shows, through action or words, the she/he has understood the conflict embedded within the story stem. It is also designed to assess the quality of the resolution provided by the child and the

degree to which the child can address the conflict. Insofar as that is the intention, there does not seem to be a gender bias inherent in the definition. However, when looking more closely at the definition it is possible that there is a bias in dealing with aggression in the stories and it is aggression which has been shown to be strongly related to gender. For example, responses at the low end of this scale would show evidence of extensive use of defensive maneuvers such as little or no engagement with the task, use of denial, extreme avoidance, aggressive and punitive responses which are senseless and provide no resolution to the story and highly bizarre or atypical response. Responses showing high levels of adaptiveness include addressing the conflict, cooperation among characters, richly embellished and sense of creative playfulness with minimal sins of punishment. The high level of adaptiveness does not take into account the adaptive uses of aggression in play that are developmentally appropriate for this age group. For example, a parent may use aggression in a story in order to protect the child from potential danger. This is not to suggest that the parent is actually aggressive but that the meaning is of the aggression is positive for the child and might represent feelings of being kept safe.

The one surprising result concerning the performance variables is that girls seemed to show more themes of anger in their narratives. Is it possible that the boys are enacting anger through the representations of physical aggression and that the girls are putting the aggression into representations such as angry words and intonations ? It is, of course possible, that when dealing with a relatively large group of variable that spurious results occur and that this could be a type one error.

In conclusion, a central result concerned the lack of marked associations between the four factor scales and the demographic data. However, one main association from the demographic data to the Discipline/Punishment factor is noted. The effect for father's social class on the Discipline/Punishment scale will have to be controlled for in subsequent analyses.

A second important finding relates to the fact that previous studies have controlled for both children's age and language ability in their analysis of the MacArthur story stems. In this instance there were no associations between either of these measures and any of the MacArthur scales and as such, subsequent analyses will not control for these.

Post hoc analysis of individual variables indicated differences in the boys and girls responses and, therefore, will be controlled for where necessary in future analyses.

The next chapter investigates the concurrent associations between the MacArthur story stems and a measure of child adaptation.

CHAPTER FIVE

ASSOCIATIONS BETWEEN THE CHILD BEHAVIOUR CHECKLIST AND THE MACARTHUR STORY STEM BATTERY

5.1 INTRODUCTION

So far this thesis has addressed important questions regarding psychometric issues of inter-rater reliability and the reduction of data in the creating of four factors from the many scales of the MacArthur Narrative Coding System (see Chapter Three). That chapter was confined to a within the MacArthur Story Stem Battery and MacArthur Narrative Coding Scheme analysis in order to provide descriptive data of the measures. The previous chapter, Chapter Four, began the exploration of the two measures by examining the extent to which the particular demographic data was associated to the narrative task. What follows in the current, and subsequent, chapters is the application of the narrative task and its associated coding scheme to several studies to examine the external validity and to explore possible correlations with other measures, particularly those of attachment. First, however, this chapter concerns the associations between the children's responses to the narrative story stem task and the well-established Child Behaviour Checklist (CBCL; Achenbach, 1983), as completed by mothers and fathers.

Relatively recently researchers in the field of psychology have begun to examine the significance of behaviour problems in children younger than six years of age and to consider these problems as potential indicators of more long-term difficulties (Campbell, 1995). The nature and extent of developmental changes occurring during toddlerhood and the preschool years underscore the potential for children to set out on either a positive or adaptive developmental course or to develop adjustment problems that may be transient or long-standing. A growing number of prospective evidence indicates that behaviour problems identified in the preschool years often persist and that children

identified as showing relatively serious disruptive behaviour problems in early adolescence often have a history of problems that began in the preschool years (Campbell, 1990).

Obtaining self-reported information from young children has also been problematic and understanding the child's experience is important for comprehensive diagnosis of problems. The story stem battery may help clinicians to learn more about the thoughts and feelings of young children which might permit identification of both externalising and, especially, internalising behaviour difficulties (Warren, Oppenheim & Emde, 1996). In a study of four- and five-year-old children from a non-clinical sample, associations between children's representations of mothers in their play narratives and measures of socioemotional adaptation, including the Child Behaviour Checklist, were found (Oppenheim, Emde & Warren, 1997). Children, both at age four and five years, who represented their mothers positively in their play narratives were rated by their mothers as having fewer externalising behaviour problems and children who had more negative representations of mother at age four and five were rated as having more externalising behaviour problems. Furthermore, representations of mothers of four-year-olds predicted behaviour problems at five years and behaviour problems at four years predicted representations of mothers at five years. Also, children who had more disciplinary representations of mothers were rated as having fewer externalising behaviour problems age four and five.

Internalising problems are especially difficult to identify in young children and, therefore, have been rarely studied; the bulk of evidence focuses on young children with

symptoms such as oppositional disorder and attention deficit disorder (Campbell, 1990). In the study mentioned above, several associations were found between the internalising behaviour scale and the story stems. Children who had more disciplinary representations at age four had fewer internalising behaviour problems at age five and children who had more positive representations at age four had fewer internalising behaviour problems at age five. These associations were shown to be unrelated to mother's psychological distress biasing their CBCL reports and were not mediated by the children's vocabulary.

Associations between children's representations of mothers and their CBCL scores were also examined with regard to the children's gender, however, the pattern of associations was found to be the same for both boys and girls. As there has been shown to be a gender difference in the present study with respect to some individual variables such as aggression (see Chapter Four), gender merits consideration in the present chapter. Therefore, gender will be controlled for with respect to these variables and the narrative responses will be considered separately for boys and for girls.

Associations have not only been found between the CBCL and children's responses on the parental representation portion of the narrative coding scheme: associations have been found between particular themes and emotions in preschool children's narratives and the Child Behaviour Checklist (Warren, Oppenheim & Emde, 1996). For example, four- and five-year-old children expressing distress in the narrative phase of the story telling task was found to correlate positively with both mother's and father's ratings on the externalising scale of the CBCL. Aggressive and destructive themes in the narratives of four- and five-year-old children were also found to correlate

significantly on both the externalising and internalising scales of the CBCL as rated by mother, father and teachers. Aggressive and destructive themes included aggression, personal injury and atypical negative response. Another study using the story stems has compared samples of maltreated and non-maltreated children and found that the maltreated childrens' narratives contained more aggressive themes in their narratives (Buchsbaum, Toth, Clyman, Cicchetti & Emde, 1991).

The majority of the few published studies exploring the associations of children's play narratives and measures of socioemotional adaptation utilise ratings by mother (Bretherton, Ridgeway & Cassidy, 1990; Oppenheim, Emde & Warren, 1997; Oppenheim, Nir, Warren & Emde, 1997). There has been only one to report on the associations with father's rating of the child (Warren, Oppenheim & Emde, 1996). The authors report a similar profile appearing for mother's and father's ratings, that is, the parents tended to agree with one another in their ratings of the child. This study will also examine the question of similarities between mother' and father's ratings in relation to the child narratives.

Overall, this chapter aims to replicate the suggestion that emotions, themes and parental representations in children's play narratives could be useful in the assessment of childhood problems and asks the question, could the MacArthur narrative task provide a useful self-report measure for children ordinarily thought to be too young to reliably discuss the presence and extent of their behaviour problems ?

It is predicted that the Controlling/Negative factor will be positively associated

with either/both the externalising and internalising scales as reported by mother and father. It is further predicted that the factors of Discipline/Punishment, Quality/Open Response and Positive Maternal Representations will be negatively related to both the internalising and externalising scales.

5.2 METHOD

5.2.1 Design

As has been previously described, the third phase of the London Parent Child Project consisted of two visits by the families. The first visit took place as close to the child's fifth birthday as possible and the second six months later. It was during the first visit of Phase Three that the data for the MacArthur Story Stems and the Child Behaviour Checklist, to be discussed in this chapter, was collected. While the child subjects were completing the MacArthur Story Stem Battery and the Bus Story language assessment (described in Chapter Three and Four) in the play hut at The Anna Freud Centre the parents was taken to the main building yards away in order for them to complete various assessments including the Child Behaviour Checklist.

5.2.2 Subjects

The subjects are those of the London Parent-Child Project that have been described in the preceding chapters. For the third phase of the study the 100 families were contacted shortly before the child's fifth birthday and asked to participate in the follow-up research. The mean age of the children (43 girls and 49 boys) was 61 months (range 59-

65 months). Eighty-nine children completed the MacArthur Story Stem Battery and each mother and father completed a Child Behaviour Checklist. Overall, there were low baselines for problem behaviours whether rated by mother or father, which is to be expected given the low risk nature of the sample, and consequently very few children were rated in the clinical or borderline regions.

5.2.3 Procedure

Child Behaviour Checklist (CBCL)

As the children were involved in completing the MacArthur Story Stem Battery and the Bus Story in the play hut their parents were waiting in the main house where each was asked to fill out the parental report form of the Child Behaviour Checklist (Achenbach & Edelbrock, 1983) (Appendix C). Each parent filled out a separate form and there was no conferring between partners.

The Child Behaviour Checklist forms part of a multi-axial empirically based assessment of children's behavioural/emotional functioning (Axis I - Parental Reports, Axis II - Teacher Reports, Axis V - Direct Assessments of the Child), with high concurrent validity with the Conners scales and the Revised Behaviour Problem Checklist. It had also been shown to have discriminant validity, distinguishing between referred and non-referred children (Achenbach & Edelbrock, 1983). An important feature of the Child Behaviour Checklist is the narrow-band syndrome scales it produces as part of a standardized child behaviour profile for each sex at specific age points (4-5 yrs, 6-11

yrs, and 12-16 yrs) derived from performing separate factor analyses for children of each sex and each age group (N=2300) who had been referred to the mental health service in the United States. Each of these scales has been normalised by comparison with CBCLs completed by parents of 1300 randomly selected 4-16 year olds who had not been referred to the mental health services in the previous year. The narrow-band scores fall under the description of broad-band problem scales, internalizing, externalizing and mixed.

5.3 RESULTS

The results of the data analyses of the Child Behaviour Checklist and the MacArthur Story Stems are reported in three sections. The first section addresses the level of agreement between the mother and father ratings on the two scales of the Child Behaviour Checklist. The second part of the results consider the data obtained from mother's rating of the subject child on the Child Behaviour Checklist. The second section is concerned with the results of the data analyses for father's rating of the child on the Child Behaviour Checklist. In both sections gender is controlled for where appropriate.

5.3.1 Agreement between maternal and paternal reports

In the one study which reported both mother's and father's ratings of the Child Behaviour Checklist as associated with children's narratives, the authors state that the parents tended to agree with each other in their rating of the child (Warren, Oppenheim & Emde, 1996). In order to discover if the parents in the current sample tended to agree

or disagree more with each other in their view of the child a correlational analysis was done comparing their ratings on the two scales. Table 5.1 presents the results of the Pearson correlations for mother's and father's ratings on the externalising and internalising scales of the Child Behaviour Checklist.

Table 5.1 : Correlations of mother's and father's rating on the CBCL scales (n =92).

	mother's externalising	mother's internalising	mother's total
father's externalising	.446 (.000)*		
father's internalising		.197 (.06)	
father's total			.506 (.000)*

Note: $p \leq .001$ (p values are based on two-tailed tests and are in parentheses)

As can be seen in the above table, mother and father have stronger agreement on the externalising scale than for the internalising scale. While the correlation on the externalising scale is moderately high and highly significant, the correlation on the internalising scale is low and indicates that mother and father tend to rate the child differently from one another for internalising behaviour problems. As a result, it was decided to do separate analyses for mother`s and father`s ratings. These will be discussed in the following two sections beginning with mother's ratings.

5.3.2 Mother's ratings on the CBCL

Table 5.2 below gives the Pearson's correlations for mother's ratings on the internalising behaviour scale, the externalising behavior scale and a combined or total score of the CBCL.

Table 5.2: Correlations and levels of significance of the four story stem factors with mother's rating on the CBCL.

	Quality/open response	**Discipline/ punishment**	**Controlling/ negative**	**Positive maternal representation**
Internalizing	.058 (.58)	.177 (.10)	-.070 (.53)	.194 (.07)
Externalizing	.014 (.89)	.070 (.52)	.189 (.07)	.036 (.74)
Total	.044 (.72)	.103 (.40)	.149 (.22)	.193 (.11)

Note : r-values are Pearson correlations; levels of significance are in parentheses; values between .05 - .10 are treated as a trend

As can be seen from Table 5.2 above, there are no significant results at the level of p =.05 or above. There are three results, two for internalising behaviour and one for externalising behaviour, that indicate a trend. That is, there is a trend for the Discipline/Punishment factor (r = .177, p = .10) and the Positive Maternal Representation factor (r = .194, p = .07) to correlate positively with internalising behaviour problems as rated by mother. There is also a trend for the Controlling/Negative factor (r = .189, p = .07) to be positively associated with externalising behaviour problems.

5.3.2a Controlling for father's social class

Although mother's rating on the internalising scale correlates just at the level of a trend for the Discipline/Punishment factor it was decided that a cautious approach would be taken in relation to father's social class as it proved to have a significant main effect for the Discipline/Punishment factor in Chapter Four. Therefore, father's social class was controlled for in a partial correlation analysis. The correlation remained significant at the level of a trend ($r = .216$, $p = .08$).

5.3.3 Post hoc analysis

As the trends found above might prove to yield informative results if examined more closely, it was decided to investigate those areas where there are trends in more detail. The individual variables comprising each factor were looked at in relation to either the internalising or externalising rating, as indicated above in Table 5.2, to see if there was any one particular variable or variables which prove significant.

The Dicipline/Punishment factor is comprised of the variables excludes other, physical punishment, shame other, verbal punishment and disciplining mother and father. The table below (Table 5.3) presents the Pearson correlations of the mother's rating of the child with each of these variables.

Table 5.3: Correlations of mother's rating of the child on the internalising scale with variables comprising Discipline/Punishment factor.

	excludes other	**physical punishment**	**shame other**	**verbal punishment**	**disciplining father**	**disciplining mother**
Internalising	.151 (.16)	-.097 (.37)	.328 (.002)**	.165 (.12)	-.024 (.82)	.143 (.18)

Note : r-values are Pearson correlations; levels of significance are in parentheses
** $p \leq .01$

An interesting result emerges from this 'unpacking' of the factor scale. The variable 'shame other' appears to be the one variable that is significantly related to the internalising scale as rated by mother.

The second factor that indicated a trend on the internalising scale is the Positive Maternal Representation factor. The two variables of affection and positive maternal representation constitute this factor and the Pearson correlations of these with mother's rating of the child on the internalising scale of the CBCL are given below.

Table 5.4: Correlations of mother's ratings of the child on the internalising scale with variables comprising Positive Maternal Representation factor.

	affection	**positive maternal representation**
Internalising	.109 (.31)	.240 (.02)*

Note : r-values are Pearson correlations; levels of significance are in parentheses
* $p \leq .05$

From the above result, it appears that positive maternal representation is the variable that is significantly related to the internalising scale.

Only the Controlling/Negative factor related to mother's rating of the child on the externalising scale. The Controlling/Negative factor is comprised of negative atypical response, physical aggression, investment in performance, control and a lack of anxiety. Table 5.5 below presents the Pearson correlations of these variables with mother's ratings on the externalising scale.

Table 5.5: Correlations of mother's rating of the child on the externalising scale with variables comprising Negative/Controlling factor.

	negative atypical response	**physical aggression**	**investment in performance**	**control**	**lack of anxiety**
Externalising	.024 (.82)	.259 (.01)**	.076 (.47)	.149 (.16)	.173 (.10)

Note : r-values are Pearson correlations; levels of significance are in parentheses
** $p \leq .01$

Again, it appears that there is one variable, physical aggression, which is associated with mother's rating on the externalising scale. There is a trend for lack of anxiety also to be positively associated with the externalising scale.

5.3.3a Mother's ratings and controlling for gender

In Chapter Four it was indicated that certain variables are significantly related to gender. Of these, physical aggression is the variable relevant to the analyses being conducted in this section. In order to examine the issue of gender for this variable in relation to CBCL scores, correlations were conducted for mother's ratings on the externalising scale with physical aggression first for only the boys in the sample and then with girls. (See Table 5.6 below).

Table 5.6: Correlations of physical aggression and the externalising scale as rated by mother for girls and boys.

	physical aggression	
	girls (n= 40)	**boys (n= 46)**
Externalising	.097 (.55)	.264 (.07)

Note : r-values are Pearson correlations; two-tailed levels of significance are in parentheses

It can be seen that physical aggression is positively associated with mother's rating on the externalising scale for only the boys at the level of a trend (p =.07) and is not associated at all with mother's rating for girls.

5.3.4 Father's ratings on CBCL

The same analyses as was conducted above for mother's ratings was conducted for father's ratings and is reported below. Table 5.7 gives the Pearson correlations for father's rating of the child on the internalising behaviour scale, the externalising behaviour scale and the combined score of the Child Behaviour Checklist.

Table 5.7: Correlations and levels of significance of father's rating of the child on the CBCL for the four story stem factors.

	Quality/open response	**Discipline/ punishment**	**Controlling/ negative**	**Positive maternal representation**
Internalizing	-.102 (.34)	.038 (.72)	-.060 (.57)	.051 (.63)
Externalizing	-.114 (.28)	-.063 (.56)	.206 (.05)*	-.001 (.98)
Total	-.140 (.25)	-.111 (.37)	-.023 (.84)	.027 (.82)

Note : r-values are Pearson correlations; levels of significance are in parentheses
* $p \leq .05$

There is one significant correlation between the Controlling/Negative factor and the externalising scale. Children who are more controlling and have more negative themes in their narratives are rated by father have more externalising behaviour problems.

5.3.5 Post hoc analysis

As with the mother data, it was decided to investigate the area where there is a significant result in more detail. The individual variables comprising the Controlling/Negative factor were looked at in relation to the externalising rating, as indicated above in Table 5.7, to see if there was any one particular variable or variables which prove significant. Table 5.8 below presents the correlations with each of the variables that comprise the Negative/Controlling factor, that is, negative atypical response, physical aggression, investment in performance, control and lack of anxiety.

Table 5.8: Correlations of father's rating of the child on the externalising scale with variables comprising Negative/Controlling factor.

	negative atypical response	**physical aggression**	**investment in performance**	**control**	**lack of anxiety**
Externalising	-.037 (.73)	.200 (.06)	.084 (.43)	.186 (.08)	.212 (.04)*

Note : r-values are Pearson correlations; levels of significance are in parentheses
* $p \leq .05$

Rather than one highly significant variable emerging, Table 5.8 shows that there is a combination of three variables contributing to the significant result found above (Table 5.7). A lack of anxiety is positively associated with externalising behaviour problems as reported by father. Physical aggression and control are also related to externalising behaviour problems at the level of trends.

5.3.5a Father's ratings and controlling for gender

Physical aggression correlated with father's rating on the externalising scale is non-significant, although there is a trend towards it being significant. As such, it was decided to investigate further by doing a separate correlational analysis for physical aggression with girls and then boys. Table 5.9 below presents these figures.

Table 5.9: Correlations of physical aggression and the externalising scale as rated by father for girls and boys.

	physical aggression	
	girls (n= 40)	**boys (n= 46)**
Externalising	.013 (.93)	.175 (.24)

Note : r-values are Pearson correlations; two-tailed levels of significance are in parentheses

As can be seen from the above figures (Table 5.8), unlike the findings for mother, there is no significant result when physical aggression is correlated to boys or girls.

5.4 DISCUSSION

This chapter was concerned with the associations between the children's responses to the narrative task and the well-established Child Behaviour Checklist. It aimed to replicate findings from several studies that suggested that emotions, themes and parental representations in children's play stories could be useful in the assessment of childhood problems.

Like the one studied reported in the introduction, there was general agreement between the parents' ratings on the scales CBCL. The agreement between parents' ratings for the externalising and total scales was high. However, there was less agreement between parents on the internalising behaviour scale.

The findings from the association of mother's ratings to the four story stem factors are somewhat disappointing. There were no significant associations and it was expected that a clearer relationship would emerge particularly between the Positive Maternal Representation and Controlling/Negative factors. As mentioned, internalising problems are particularly difficult to identify in young children. However, the decision to look more closely at the component variables of theses factors proved interesting. In the case of mother's ratings, it was discovered that the one component variable which was highly significantly related to the internalising scale was 'shame other'. Shame other is one of the content variables and is scored present or absent if an incident involving shaming another character is mentioned. For example, one character may say to another. 'Shame on you, you are bad !' or 'You are a naughty girl !'. This relationship might be explained by psychoanalytic theory which suggests that children often displace or project feelings of unworthiness or shame onto other people or characters in their play. Unfortunately, the variable describing 'shaming self' was not reliably rated and so is not available for comparison. Nevertheless, the frequency of times the themes are used provides some evidence that might support this; 'shame other' is used over 100 times in the stories and 'shame self' only eight.

As expected, there was a relationship between mother's rating on the

internalising scale with the positive maternal representation variable, however, the *direction* of the relationship was not expected. Those children who had more positive maternal representations also had mother's who reported more internalising child behaviour problems. This is contrary to the above mentioned study and perhaps counter-intuitive. However, two possible explanations come to mind. It is possible that children who are experiencing internalised problems receive more praise and positive encouragement from their mother and so come to represent their mothers as positive reflecting reality. It may also be that children who are rated as having internalised behaviour problems idealize their mothers and defend against any painful perception of a mother who is not as benevolent as the child wishes by representing a caring affectionate mother. We do not have the data to make judgements about this. It is possible that observations in the home might provide such evidence. It is always possible that the result is a spurious, type one error.

Not so surprisingly, there was an association found between physical aggression, one of the component variables of the Controlling/Negative factor, and mother's rating on the externalising scale. Those children rated as having externalising behaviour problems had more instances of physical aggressin in the stories. This was true even after controlling for gender.

There was one significant relationship between father's ratings of the child on the externalising scale and the Controlling/Negative factor as predicted. Those children who scored higher on the Controlling/Negative scale were reported to have externalising behaviour problems. When this factor was broken down into its component variables

it was shown that there was no one variable strongly associated to father`s ratings but rather three variables seemed to be responsible for the overall significant result obtained for the Controlling/Negative factor. These were physical aggression, control and a lack of anxiety.

Physical aggression in the stories is distinct from both verbal aggression and physical punishment. For example, it is scored when the subject has one doll push or hit another or one doll pushes another off a bike or chair. Control is one of the performance variables and is indicated by the subject attempting to control the examiner or the situation. For example, the child may refuse to relinquish control of a doll or prop. The definition of control includes the understanding that the subject child must persevere in their controlling attempts, that is, just one incident of refusing to give up a doll would not be counted. The lack of anxiety associated with behaviour problems on the externalising scale is possibly related to both physical aggression and control in that all of these variables might be seen as ways of putting negative feelings into action. Anxiety would not be coded as defined (repetitive body movements, hand rubbing face, chewing lips, etc.) because the children would be enacting feelings of anxiety and helplessness in their controlling and aggressive behaviour both in the play and with the examiner.

In summary, there were few major difference found between the associations of mother`s and father`s ratings and the child narratives. The one significant result of father's rating on the externalising scale being related to the Controlling/Negative factor is echoed by the trend for the same result in mother`s rating, although not statistically significant. A similar picture emerges when the individual variables are compared with

mother's and father's ratings. In the case of mother's ratings, it is aggression which is the telling variable and in father's case it appears to be a combination of a lack of anxiety, physical aggression and control. This seems to be confirming the results described by (Warren et al 1996), however, caution must be observed in interpreting the above result as none of the results are particularly strong. This could be due to the nature of the non-clinical sample.

The following chapters will investigate the concurrant and longitudinal associations between the narrative task and measures of attachment organisation.

CHAPTER SIX

ASSOCIATIONS BETWEEN THE MACARTHUR STORY STEM BATTERY AND CHILD-PARENT ATTACHMENT

6.1 INTRODUCTION

The previous chapter explored links between the story stems and the child`s adaptive behaviour and attempted to replicate the few previously published studies relating to representations of the child`s internal world to socio-emotional functioning.

This chapter moves the investigation of the young child`s internal world into the area of attachment theory and investigates the possibility of concurrent associations between the children`s responses to the MacArthur Story Stem Battery and their attachment security as measured by the Modified Strange Situation.

As has been suggested earlier in this thesis, attachment theory is of crucial importance when discussing the link between the parent-child relationship and the child's developing understanding and skills in the world outside of that relationship. Early attachment theory proposes (see, for instance, Bowlby, 1973) that an individual's early attachment relationships later become 'transformed' into inner representations, and that these representations have predictable implications for experiences, particularly emotional ones, in later life.

In a study conducted with three- and four-year-old children and their parents, concurrent associations were discovered between the children`s responses on the MacArthur Story Stem Battery and measures of family relationships and adaptation (Oppenheim, Emde & Winfrey, 1993). In a sample of fifty-one, primarily white middle-class families, they found that the children`s narratives about affect and

conflict themes were associated in predictable and theoretically meaningful ways with the socio-emotional adaptation of children and parents as measured by the CBCL (see previous chapter) and with the quality of family relationships. In this case, the expression of differences in the quality of family functioning in children`s narratives depended on gender. Narrative coherence served as the indicator of family functioning for boys and aggressive themes for girls. Aggressive themes included aggression, verbal conflict, escalation of conflict and atypical negative responses. This informs us about a link between representations in the stories and general family functioning as measured by a parent-child relationship questionnaire. A limitation of the study is that it concentrated on themes of conflict and did not include all domains of the MacArthur Coding System.

Contemporary attachment work seeks empirical investigation of the link between early quality of attachment, later quality of attachment, and later quality of life (see for example, Grossmann & Grossmann, 1991). The present chapter adds to this investigative effort specifically with respect to concurrent associations between individual differences in attachment security (as assessed by the Modified Strange Situation) and individual differences in a narrative task (as assessed by the MacArthur Story Stem Battery). This study contributes to the literature discussed earlier in this thesis primarily by lending evidence to support the validity of the MacArthur Story Stem Battery, and adds to attachment literature by taking a unique look at the connection between the attachment relationship in the preschool years and preschool functioning. This specific connection is new territory for attachment literature as methods for assessing patterns of attachment behaviour beyond 12 to 18 months (the

'Ainsworth system,' discussed in the next chapter) are recent developments. A system for two and a half- to four and a half-year-olds was developed in 1989/1992 by Cassidy and Marvin, and a system for six-year-olds was developed in 1988 by Main and Cassidy. The assessment of patterns of attachment behaviour in this study is made using the Cassidy and Marvin system.

There has been only one report in the literature concerning concurrent assessment of attachment using the Cassidy and Marvin (1989/92) Modified Strange Situation and a story stem task (Bretherton, Ridgeway & Cassidy, 1990). The study conducted with three-year-old children used five story stems from the Battery, three of which are the same administered to the present sample. However, the stories were not coded using the recently developed MacArthur Coding Scheme, rather they were categorised as demonstrating secure, avoidant, resistant or disorganised relationships. These were then compared to the attachment classifications of the Modified Strange Situation. The concordance of secure versus insecure classifications for both procedures was significant, however, the type of insecurity was not consistent across procedures. The authors found that the story scores were also significantly related to the Strange Situation with mother at 18 months, but the correlations were not as strong as the association between storey scores and concurrent separation-reunion security.

The study above limited itself to assessing the stories with an eye to attachment. The MacArthur Coding System is a more systematic approach and covers themes and content that occur naturally in children`s play. This allows us to explore

themes or groups of themes that might seem unrelated to attachment at first glance but which might inform us further about links between the child's concurrently assessed attachment classification and his or her functioning. This in turn might lead to further understanding of the manner in which attachment is organised in five year olds - a relatively unexplored area.

6.2 METHOD

6.2.1 Design and Subjects

The participants discussed in this chapter are a part of the London Parent-Child Project sample, which has been referred to throughout this text. The data presented in this chapter is from the most recent stages of this longitudinal project collected on two visits when participants were in the sixth year of life. At five years, the adapted Strange Situation procedure (Cassidy & Marvin, 1992) was conducted with mother. Through lack of response or relocation at this visit, the sample was reduced from the original sample by 7%, leaving 89 children (43 girls and 46 boys) who were seen in the modified Strange Situation with mother at age five. At five and a half to six years (referred to as the "sixth year visit") the modified Strange Situation was conducted with father in a new and 'strange' playroom. The sample was reduced by a further 20% and 71 children (35 boys and 36 girls) were seen at this time with father.

Of the 89 children who were assessed in the modified Strange Situation procedure with their mothers at five years, 57 were classified as secure (B), 19 as insecure-avoidant (A), 7 as insecure-ambivalent (C), and 6 as disorganised (D). Of the

71 participants who attended the second visit and were assessed at this time in the modified Strange Situation with father (46 secure, 21 avoidant, and 4 ambivalent).

. No children were classified in any of the insecure-controlling or disorganised groups with father.

6.2.2 Procedure

6.2.2a The Modified Strange Situation

The Modified Strange Situation procedure is an variation of the original system developed for use in infancy (Ainsworth et al., 1978), and the system developed for use with older children (Main & Cassidy, 1988). The adaptation, most importantly, eliminates the 'stranger' from the procedure, in an effort to make it appropriately stressful for preschoolers. This version was first used by Marvin and Van Devender (1978) and is recommended by Cassidy and Marvin (1989/1992) for assessments involving preschoolers. Apart from eliminating the role of the 'stranger', the procedure remains the same as the Ainsworth's infant Strange Situation. A summary of episodes of the Modified Strange Situation follows:

Episode 1 (3 minutes): *Warm up,* parent and child are in the playroom together.

Episode 2 (3 minutes)*: *Separation 1*, parent leaves the room and the child remains alone.

Episode 3 (3 minutes): *Reunion 1*, parent returns.

Episode 4 (6 minutes)*: *Separation 2,* parent leaves the room and the child remains.

Episode 5 (5 minutes): *Reunion 2,* parent returns.

**These episodes are ended or shortened if child becomes unduly distressed.*

6.2.2.b Coding Procedure for Modified Strange Situation

The system used to classify and rate organisations of attachment behaviour in preschoolers on the basis of the procedure described above involves five main attachment classifications and two rating scales. Full descriptions can be found in the coding manual used by raters (Cassidy & Marvin, 1989/1992). Each classification is briefly described below.

Attachment Classifications

Secure

1. very secure: nearly immediately calm upon reunion, intimate interactions with full gaze and positive affect. The interactions have intent and indicate that the relationship is special;

2. secure-reserved: compared with very secure, initial reserve upon reunion (subsets I and ii), less interest, openness and ease (subset iii), or less visual and/or physical proximity, even though verbally responsive (iv);

3. secure-ambivalent: generally secure behaviour, but elements of either resistant

or immature behaviour also present;

4. secure-controlling: generally secure behaviour, but either a mild struggle for control for much of the reunion episode, or traces of controlling behaviour;

5. secure-other: generally secure behaviour, but either does not fall into any of the above groups, or shows a mixture of groups.

Insecure-Avoidant

1. ignoring: extreme physical and conversational avoidance, minimal responses;

2. neutral: less extreme avoidance.

Insecure-Ambivalent

1. resistant: angry, whiny resistance directed to parent or to parental suggestions;

2. immature: immature, coy behaviour, often with ambivalence to physical proximity/contact.

Insecure-Controlling/Disorganised

1. caregiving: 'cheerful' behaviour, perhaps in an overly 'bright' greeting or show of toys, but not followed up by positive affect and congruous interactions;

2. punitive: punitive, hostile behaviour, perhaps telling parent what to do in a derogatory, annoyed or angry manner;

3. general: both or neither of the above forms, but clear control of the interactions;

4. disorganised: disordering of expected sequences; incomplete or undirected movements, including stereotyped behaviour, confusion and apprehension, dazed expressions, and depressed affect.

Insecure-other

1. insecure behaviour with either does not fall into any of the above insecure groups, or shows a mixture of groups.

6.3 RESULTS

The results are divided into two sections: the first section describes the data in relation to the child's attachment to mother at age five using the Modified Strange Situation. The second section presents the results for the child-father attachment data.

6.3.1 Child-mother data

Independent sample t-tests were calculated to determine if there were associations between the four story stem factors derived from the children's responses to the narrative task (see Chapter Three) and their concurrent attachment classification with mother as assessed by the Modified Strange Situation. Table 6.1 below presents the means, standard deviations and levels of significance for the four story stem factors grouped by insecure versus secure attachment classification with mothers. Levene's test for the homogeneity of variance was observed and the values for the equal and unequal groups used accordingly.

Table 6.1 : Means and SDS of the four story stem factors grouped by child insecurity vs. security with mother at five years of age.

Factor	**Means (SD)**		**df**	**T-value**	**Significance***
	insecure (n =32)	**secure (n=54)**			
Quality/Open Response	1.7211 (.29)	1.8001 (.22)	84	1.40	.16
Discipline/Punishment	.1793 (.08)	.1558 (.10)	81	1.07	.28
Controlling/Negative	.5490 (.22)	.5348 (.18)	84	.32	.75
Positive Maternal Representation	.1242 (.12)	.1261 (11)	81	.07	.94

Note: * two-tailed levels of significance

As can be clearly seen from Table 6.1 above, there are no significant associations between the four factors and security of attachment to mother at age five years. As a result of the lack of associations it was deemed meaningless to conduct any further post hoc investigations using the three and four way classifications of attachment.

Given the lack of positive findings with the child-mother data, the question remains, will there be associations of the factors with the child-father data ?

6.3.2 Child-father data

Independent sample t-test were also calculated to determine if there were associations between the four story stem factors derived from the children's responses to the narrative task (see Chapter Three) and their concurrent attachment classification with father as assessed by the Modified Strange Situation. Table 6.2 below presents the means, standards deviations and levels of significance for the four story stem factors grouped by insecure versus secure attachment classification with father as

measured by the Modified Strange Situation age five and a half years. Levene's test for the homogeneity of variance was observed and the values for the equal and unequal groups used accordingly.

Table 6.2 : Means and SDS of the four story stem factors grouped by child insecurity vs. security with father at five and a half years of age.

Factor	**Means (SD)**		**df**	**T-value**	**Significance***
	insecure (n= 25)	**secure (n= 45)**			
Quality/Open Response	1.7040 (.35)	1.8073 (.16)	29.88	1.37	.18
Discipline/Punishment	.1746 (.10)	.1596 (.08)	66	.63	.53
Controlling/Negative	.5381 (.15)	.5328 (.21)	68	.11	.91
Positive Maternal Representation	.1206 (.13)	.1384 (.12)	66	.55	.58

Note: * two-tailed levels of significance

Again, there is no significant result to report. Therefore, there is no point in performing further analyses until several problems are addressed and these are discussed below.

6.4 DISCUSSION

This chapter aimed to investigate the possible associations between the MacArthur Story Stem Battery and a concurrant measure of child-parent attachment, the Modified Strange Situation. The lack of positive results of the four factors to either the child-mother or child-father data is disappointing.

One of the first questions that must be asked is, is attachment being adequately

assessed by the chosen method ? The childhood attachment classification procedures presented in this chapter have been developed recently, and must endure reasonable speculation as to whether or not they are *really* measuring attachment (Speltz, Greenberg, & deKlyen, 1990). Given the vast developmental changes which occur from infancy to the preschool years, the use of an attachment classification system which is very similar to the infancy system must be questioned.

The first question is that of the stressfulness of the Strange Situation for children of this age. The defining element, of course, of the Strange Situation in infancy is that the infant finds the situation stressful, allowing observers to witness attachment behaviours of infant to parent as the infant seeks to deal with this stress (secure infants using parent as a "secure base" for comfort in this stressful time). Simply because the Strange Situation is widely supported as a useful measure of attachment in infancy, it cannot be assumed that this remains the suitable context for measuring early childhood attachment as well (Cicchetti et al., 1990). If children of this age are no longer stressed by this situation, then one can assume that measuring attachment in this context is invalid. Empirical support exists for this observational method of measurement in children at least up to school age. As mentioned in the introduction, Bretherton et al. (1990a) found a significant relationship between attachment security of preschool children using the Cassidy and Marvin system and the narrative assessment of attachment. In addition, attachment classification based on separation-reunion situations at 4 ½ years has been associated with the children's response to the SAT, a narrative representational task involving separation pictures (Shouldice & Stevenson-Hinde, 1992). The question remains, however, with respect

to children in the sixth year. Perhaps this situation is one which a child of this age no longer finds 'strange' or stressful.

The point was made earlier that representational aspects of life and language are extremely important to a five-year-old child. This may be a shortcoming of the present assessment of attachment, the reliance on one 'type' of measurement only. It is possible that complete reliance on an observational method of measuring attachment is not in congruence with the complexity of children at this age. This is not to reject the separation-reunion assessment, it is only to suggest that multiple assessments may be useful for children of this age, providing investigators with more 'clues' than they perhaps need in assessing less 'complex' infants (see Ainsworth, 1990; Main & Cassidy, 1988). With respect to attachment classifications at this stage, the sophisticated language which these children have developed by the sixth year may indicate that it is inefficient not to consider *both* how the child describes and recognises emotion, narrates his/her thoughts, feelings, and intentions, *and* how the child behaves.

In conclusion, in this chapter no meaningful connections between the children's narrative responses at age five and concurrent child attachment classifications is made, but meaningful questions are posed. The next question posed is will investigating the quality of *early* attachment relationships offer more meaningful information regarding the influencing factors in children's ?, and that by considering this early attachment relationship one will find stronger confirmation of

the attachment-narrative link.

CHAPTER SEVEN

ASSOCIATIONS BETWEEN THE MACARTHUR STORY STEM BATTERY AND INFANT-PARENT ATTACHMENT

7.1 INTRODUCTION

Chapter Five found associations between the story stems and a well-established measure of child adaptation, the Child Behaviour Checklist. The previous chapter investigated associations between a concurrent measure of attachment, the modified Strange Situation, and the child narratives. The predicted association between the child's currant attachment classification to mother and/or father and their stories, however, was not confirmed. Questions regarding the construct validity of the measure used to assess preschool attachment were raised and it was decided that by looking at the quality of *early* attachment, measured by a validated instrument, more meaningful information might be gained regarding the influencing factors in children's narrative construction. Early attachment is thought to be related to later functioning in quality of communication and affect regulation and this chapter investigates the question of associations between the results of the children's responses to the MacArthur Story Stem Battery and their attachment security assessed at twelve months of age with mother and eighteen months of age with father using the Strange Situation procedure from Phase II of the London Parent-Child Project as described in Chapter Two. In contrast to the previous chapter there is much more substantive literature surrounding the developmental sequelae of infant-parent attachment status. Longitudinal data assessing attachment can provide valuable information on the later development of attachment

The story stem play narrative technique seems to hold promise for researchers attempting to investigate the possible influences of early relationship experiences on the

inner world of the preschool child. The battery covers a range of domains in a systematic fashion and has been found to be a good elicitor of responses that elucidate the representation of experiences of family relations and relationships, conflicts and defences. (Buchsbaum & Emde, 1990). They also offer a way to look at the child's representations of thematic content while also addressing behavioural style or the way in which the child conveys these themes.

One of the original aims of the MacArthur working group developing these narratives was to create an assessment of attachment in preschool and school age children which did not rely exclusively on behavioural observations. They wished to take into account the developing abilities of preschool children, central among them language skills, in an attempt to access the representations of attachment and in doing so bridge the gap between the infant and adult attachment assessment methodologies described earlier in this thesis (Bretherton, Ridgeway & Cassidy, 1990).

This study is the first to apply the recently developed MacArthur Narrative Coding Scheme to a group of non-clinical five year old children whose attachment status at infancy with both parents is known. This chapter refers to many data regarding the story stems and possible associations to both infant-mother and infant-father attachment. Some a priori predictions are made while other investigations are post hoc and exploratory and, as such, there are no a priori hypotheses.

The main question to be addressed in this chapter remains, will the *behavioural* assessment of attachment in infancy be able to predict the child's narrative performance

in the MacArthur Story Stem Battery ? That is, does a behavioural assessment of the internal working model of attachment collected prior to the emergence of the verbal self predict the nature of narrative accounts of children at age five ?

Keeping in mind recent theories regarding a communication perspective of attachment theory discussed in Chapter Two, it is predicted that secure children will give more responses that are of higher quality and more open and that they will use more themes of discipline and non-excessive punishment and positive maternal representations. Furthermore, it is predicted that insecure children will give more responses of a controlling and negative nature.

No predictions will be made regarding differences between the various groups of insecurely attached children. Many researchers have had difficulty in predicting differences between insecure-avoidant and insecure-resistant children and it has been suggested that, rather than see these misses as a limitation in the system, perhaps we need to take more seriously the complex relationship between minimization and maximization of affective styles for instance, as clinical experience shows us that most individuals rely on a mixture of these two strategies (Slade, 1993). Therefore, no a priori hypothesis regarding differences between the insecure types of attachment classification will be made. A post-hoc, exploratory analysis of the insecure attachment types will be conducted and discussed.

Another question that researchers working with story stem techniques often ask is knowledge about the specifics of each story. For example, which stories are similar to each other and which different ? Some of these questions were addressed in Chapter

Three, however, the current chapter will attempt to address these questions in relation to attachment. Are there particular stories which might be better at distinguishing the insecure from the secure groups ? While many of the story stems describe situations common to the lives of five-year-old children, three of the stories, Burned Hand, Separation and Reunion, might be said to deal with attachment related issues. Separation and Reunion stories ask the child to respond to a scenario in which both parents leave on a short trip. The Burned Hand story asks the child to respond to how the parent will react in the face of injury to the child protagonist. Because of the attachment-related nature of these stories, it is predicted that these stories will be among those distinguishing insecure from secure children.

A secondary aim of this chapter is to address the relatively unexplored area of the relationship between the child's attachment to father compared and contrasted with the child's attachment to mother. This chapter undertakes to add to the information concerning the longitudinal differential effects of mother and father attachment. Attachment researchers have frequently argued that the security of the child-mother and child-father attachment is independent reflecting what are presumed to be different interactive styles (Oppenheim, Emde & Wambolt, 1996; Steele, Steele & Fonagy, 1991). In Phase One and Two of this longitudinal project, the Adult attachment Interview was administered to the parents before the birth of the first child. The Strange Situation results were powerfully predicted by the attachment classification of the respective parent on the AAI (Fonagy, Steele &Steele, 1991). Based on these findings, the authors concluded that the infant develops independent models for his/her major attachment relationships based on his/her past history in interactions with each of these individuals. Therefore, we might

expect to find that different aspects of the narratives of the children prove important depending on whether we are looking at the narratives in relation to the mother-infant attachment or the infant-father attachment history. The expectation is that different elements of the narratives will be associated to attachment in infancy for mother and for father.

7.2 METHOD

7.2.1 Design

The infant-parent attachment was assessed using Ainsworth's (Ainsworth et al, 1978) Strange Situation procedure during Phase II of this longitudinal study (see H. Steele, 1991 and M.Steele, 1990). The Strange Situation was conducted with mother when the infant was 12 months of age and with father at eighteen months of age. The story stems were administered in the most recent phase of the Project, Phase III, when the children were five years of age. The story stem battery was part of a testing procedure that took between one and half and two hours in the absence of the parents. This has been described in detail in Chapter Three.

7.2.2 Subjects

The subjects are the same children as previously described in Chapters Three, Four and Five. To remind the reader, ninety-two children took part in the study, with eighty-nine actually completing all eleven story stems. The mean age of the children (43 girls and 49 boys) was 61 months (range 59-65 months). For eighty-six of the children there are complete records of their responses to the story stems, however, for three of the children there were technical difficulties involving the sound and so the responses concerning the content portion of the coding system are unavailable. It was possible to

code the performance data from the video tapes of these children.

The subjects for whom there is complete data varies according to instrument and is presented in Table 7.1 below.

Table 7.1: Infant-parent security grouped by instrument, forced classification in parentheses.

	with Mother at 12 months					**with Father 18 months**				
	A	B	C	D	N	A	B	C	D	N
Strange Situation	27 (4)	55 (0)	6 (5)	9	97	25 (3)	61 (1)	0 (0)	4	90
Story Stems	29 (3)	50 (0)	9 (4)	7	88	24 (3)	55 (1)	0 (0)	4	82

A - insecure-avoidant C - insecure-resistant
B - secure D - disorganised

7.2.3 Procedure

The procedure used to gather the infant-parent classification of attachment with mother at 12 months and with father at 18 months, Ainsworth's Strange Situation, has been described in Chapter Two and more specifically elsewhere (Steele, M., 1990; Steele, H., 1991). The method of administering the MacArthur Story Stem Battery has also been described in detail in Chapter Three.

The following is a brief reminder of the four different infant-parent attachment classifications.

Secure (B) - The infants who are classified as securely attached use their mother as a secure base from which to explore the unfamiliar environment. In her absence they reduce their exploration and may be distressed, but greet her positively on reunion and

then return to exploration.

Insecure-avoidant (A) - The insecure-avoidant infants explore with little reference to the parent, shows little distress to his/her departure and appears to ignore or avoid the parent upon his/her return.

Insecure-resistant (C) - The third pattern, insecure-resistant or insecure-ambivalent child typically fail to move away from mother, and so do little exploration, they are highly distressed upon separation and remain difficult to settle on reunion.

Insecure-disorganised (D) - This fourth pattern, insecure-disorganised is a recent categorisation derived from clinical samples in which it was noted that a small number of children could not be confidently classified in one of the other three. Overall these children do not appear to have a coherent strategy for handling exploration and attachment, and engage in odd behaviours which were inexplicable except in the context of fear or confusion in the presence of the mother.

7.3 RESULTS

This section describes the associations between the four scales derived from the factor analysis of the children's responses to the MacArthur Story Stem Battery (using the MacArthur Narrative Coding Scheme) and the infant-parent attachment classification with mother at 12 months and father at 18 months. The results of the data with mother are addressed first followed by those for father. Four sets of results are

presented for the infant-mother attachment data. Presented first are the results utilising insecure vs secure classifications only. This is followed by a post hoc analysis using the original three system category of classification (A- insecure-avoidant, B- secure and C - insecure-resistant) and finally, the four-way classification which includes the disorganised category is shown.

These analyses are followed by a more detailed look at the results of those factors which proved significantly associated with infant-mother attachment classification. Each factor that proved significantly associated with infant-mother attachment is examined with each of the eleven stories in the battery that was administered to the children.

Because one of the aims of this thesis is to explore the MacArthur Story Stem Battery and the MacArthur Narrative Coding Scheme as thoroughly as possible, the story analysis will be followed by an analysis of the individual reliable variables from Chapter Three with infant's attachment classification with mother at twelve months.

The second section of the results will consider the data regarding the child attachment to father at eighteen months as described above for infant-mother data. Because none of the children were classified as insecure-resistant with father at 18 months, it is not possible to examine the data by grouping the children in the original three-way system of categories. Therefore, results from the insecure vs secure classifications and a three-category classification including the disorganised category are presented. These are also followed by an individual story analysis for the factor which proved significant and an analysis of the reliable individual variables with infant's

attachment classification with father at eighteen months.

7.3.1 Infant-mother data and the story stem factors

Independent sample t-tests were run first to determine if there were associations between the four factors and an insecure versus a secure attachment to mother when the infant was 12 months. Levene's test for the equality of the variances was observed and the values for the equal and unequal groups were used accordingly. The results are presented in Table 7.2 below.

Table 7.2 : Means and SDS of the four story stem factors grouped by infant insecurity vs. security with mother at twelve months.

Factor	**Means (SD)**		**df**	**T-value**	**Significance**
	insecure	**secure**			
Quality/open response	1.7008 (.26)	1.8281 (.22)	86	2.41	.01**
Discipline/punishment	.1338 (.07)	.1868 (.10)	83	2.73	.008**
Controlling/negative	.5521 (.21)	.5334 (.18)	86	.44	.66
Positive maternal representation	.1237 (.11)	.1252 (.12)	83	.06	.95

Note : ** $p < .01$ (two-tailed levels of significance)

The results from the above table indicate that there are two significant results at level $p \leq .01$ or better. Both the Quality/Open Response and the Discipline/Punishment factors proved to be significantly associated with infant-mother attachment classification. Children who were classified as secure with mother at 12 months of age showed significantly higher levels of Quality/Open Responses to the narratives and referred to

more Discipline/Punishment themes in their narratives than children classified as insecure.

7.3.1a Controlling for father's social class

The reader will remember from Chapter Three that father's social class was found to be significantly related to the Discipline/Punishment factor. In order to discover if there is an interaction effect of father's social class with the infant-mother attachment classification on this factor a two-way analysis of variance was conducted. Table 7.3 below presents the means, standard deviations, F-values and levels of significance of the three groups of father's social class with infant security to mother at 12 months for the Discipline/Punishment factor.

Table 7.3 : Means and SD of father's social class and security of attachment to mother at 12 months for the Discipline/Punishment factor.

	Means (SD)						**F-value (df)**	**p**
	professional and managerial		**intermediate occupations**		**partly skilled and skilled**			
	insecure	secure	insecure	secure	insecure	secure		
Discipline/ punishment	.1193 (.05)	.1597 (.09)	.1433 (.08)	.1703 (.10)	.1152 (.03)	.2742 (.10)	2.86 (2,82)	.07

As can be seen in Table 7.3, there is no significant interaction effect between father's social class and the infant's attachment classification at 12 months. Although p =.07 is considered a trend, the result is still non-significant and, therefore, father's social class will not be controlled for in the following analyses of the infant-mother data.

7.3.1b Post hoc analyses

Given that there were significant associations between two of the four factors at the insecure versus secure level of categorisation, the next question to be addressed is, would the differences in the children's responses to the story stems be associated with the more specific categories of the infant-mother insecure classifications ? In order to address this question two analyses of variance were conducted. The first, possible associations between secure and the avoidant and resistant types of insecure classifications of attachment, are presented below in Table 7.4. This analysis uses the original three-way system of classification. Levene's test for the homogeneity of variance and other features for parametric testing were observed and indicated that for the Quality/Open Response, Controlling/Negative and Positive Maternal Representation factors a parametric one-way analysis of variance would be the appropriate test. However, for the Discipline/Punishment scale there was a significant indication (Levene's 3.54, p = .03) that homogeneity of variance was skewed and so the equivalent non-parametric test, the Kruskal-Wallis one-way anova, was used (see Table 7.5).

Table 7.4 : Means and SDS of story stem factors grouped by original three-way classifications of infant attachment with mother at 12 months.

Factor	**Means (SD)**			**df**	**f-ratio**	**f-prob**
	avoidant (n=29)	**secure** (n=50)	**resistant** (n=9)			
Quality/open response	1.7261 (.25)	1.8281 (.22)	1.6195 (.29)	2,85	3.55	.03*
Controlling/negative	.5763 (.22)	.5334 (.18)	.4741 (.17)	2.85	1.02	.36
Positive maternal representation	.1396 (.11)	.1252 (.12)	.0682 (.08)	2,82	1.12	.32

Note : *p< .05 (two-tailed levels of significance)

Table 7.5 : Mean rank of the Discipline/Punishment factor grouped by three-way attachment classification with mother at twelvemonths.

Factor	**Mean rank**			**df**	**h-value**	**significance**
	avoidant	**secure**	**resistant**			
Discipline/punishment	38.05	47.87	30.50	2	5.0823	.07

Note : p levels are based on two-tailed levels of significance

Table 7.4 shows that the Quality/Open Response factor indicates a significant level ($p = .03$) of distinction between the three levels of attachment classification with mother at 12 months. It is the secure children who give more responses on the Quality/Open factor than either the avoidant or resistant children. However, Scheffé's post-hoc test was also conducted which stated that there was no significant difference between any two groups at the level of $p = .05$. For the Kruskal-Wallis one-way analysis the h-value is reported (Table 7.5). [The difference in this value correcting for ties is negligible and means that less than 25% of the observations are tied (Siegel & Castellan, 1988).] The Discipline/Punishment factor does not prove to be significant for any one category of insecurity, although there is a trend in the direction of the secure children using more Discipline and Punishment themes than either the avoidant or resistant children.

Table 7.6 below gives the means, standard deviations and levels of significance for the four factors considered by the four-way infant attachment classification of secure, avoidant, resistant and disorganised.

Table 7.6 : Means and SDS of the four story stem factors by four-way classification of infant security with mother at 12 months.

Factor	**Means (SD)**				**df**	**f-ratio**	**f-prob**
	avoidant (n=26)	**secure** (n=50)	**resistant** (n=5)	**disorganised** (n=7)			
Quality/Open response	1.7117 (.26)	1.8281 (.22)	1.7111 (.15)	1.6530 (.34)	3,84	1.99	.12
Discipline/punishment	.1352 (.07)	.1868 (.10)	.1030 (.09)	.1540 (.04)	3,81	2.43	.07
Controlling/negative	.5580 (.22)	.5334 (.18)	.3830 (.10)	.6508 (.18)	3,84	1.96	.12
Positive maternal representation	.1455 (.12)	.1252 (.12)	.0364 (.03)	.1061 (.08)	3,81	1.23	.30

The above table (Table 7.6) indicates that none of the four factors prove significant at a level of p=.05 or better. Again there is a trend indicated for the Discipline/Punishment factor that suggests the secure children are giving more responses for this theme than any of the categories of insecure children. However, caution must be applied to these results as the group sizes for the resistant and disorganised children are too small to ensure the reliability of the results for the statistical analysis. Scheffé's post hoc test was not observed as there was no significant difference between any two groups at the level of p =.05.

Because it is possible that the relatively recently discovered disorganised category which identifies children might be obscuring the results a separate analysis was undertaken in which the disorganised children were excluded from the analysis. The result of the one way analysis of variance for this group is presented in Table 7.7 below. Again, Levene's test for the equality of the variances was observed.

Table 7.7 : Means and SDS of story stem factors by three-way classification of attachment with mother at 12 months excluding the disorganised group.

Factor	**Means (SD)**			**df**	**f-ratio**	**f-prob**
	avoidant (n=26)	**secure** (n=50)	**resistant** (n=5)			
Quality/open response	1.7117 (.26)	1.8281 (.22)	1.7111 (.15)	2,78	2.27	.10
Discipline/punishment	.1352 (.07)	.1868 (.10)	.1030 (.09)	2,76	3.44	.03*
Controlling/negative	.5580 (.22)	.5334 (.18)	.3830 (.10)	2,78	1.71	.18
Positive maternal representation	.1455 (.12)	.1252 (.12)	.0364 (.03)	2,76	1.72	.18

Note : *p< .05 (two-tailed levels of significance)

As can be seen from Table 7.7, there is again a significant result for the Discipline/Punishment factor once the disorganised children have been excluded form the group. Again, caution must be exercised in interpreting the results as the group size of the resistant children is extremely small. Scheffé's post hoc test was observed and confirmed that no two groups are significantly different at the p=.05 level. The result for the Quality/Open factor is no longer significant and suggests that the significance stems from the inclusion of the insecure-disorganised children.

7.3.2 Infant-mother data per story

In order to increase the knowledge about the specifics of each story and to determine if there was any one story or a pattern of stories that was contributing towards the significant results for the two factors of Open/Positive Response and Discipline/Punishment further analyses were conducted. The first factor, that of Quality/Open Response, was calculated per story (see Chapter Three). Only those stories

for which the internal consistency was high enough ($\propto > .40$) for this factor were used. In the case of the Quality/Open Response factor, the Separation story did not meet this criterion ($\propto = .34$) and so it was dropped from the analysis. Independent sample t-tests were conducted and Levene's test for the equality of the variances was observed and the values for the equal and unequal groups were used accordingly. Table 7.8 below gives us indication of which stories are proving to be important in determining this factor.

Table 7.8 : Means and SDS of insecure vs secure attachment with mother at 12 months by story for the Quality/Open Response factor.

Story Stem	**Means (SD)**		**df**	**T-value**	**Significance**
	insecure	**secure**			
Spilled Juice	1.7646 (.35)	1.9233 (.32)	86	2.20	.03*
Mother's Headache	1.6082 (.29)	1.7022 (.33)	86	1.39	.16
Three's a Crowd	1.7617 (.41)	1.8100 (.36)	86	.58	.56
Burned Hand	1.7193 (.32)	1.8822 (.33)	86	2.27	.02*
Lost Keys	1.7719 (.32)	1.8922 (.34)	86	1.68	.09
Sweet Shop	1.6082 (.28)	1.7033 (.30)	86	1.50	.13
Reunion	1.7953 (.44)	1.9178 (.36)	86	1.41	.16
Bathroom Shelf	1.7690 (.40)	1.8922 (.29)	86	1.66	.10
Exclusion	1.5804 (.42)	1.7744 (.35)	86	2.33	.02*
Biscuit Tin	1.6944 (.47)	1.8922 (.28)	86	2.27	.02*

Note : * $p < .05$ (two-tailed levels of significance)

The Spilled Juice story ($p= .03$) and the Burned Hand story ($p= .02$) indicate that secure children give more Quality/Open Responses to both the task and the examiner at a significant level. The Exclusion Story and Biscuit Tin also indicate a significant

difference between the insecure and secure groups (both at level of significance p=.02) with the secure children giving more of these responses.

The results of the analysis for the second factor, Discipline/Punishment, by story is presented in the table below (Table 7.9). The internal consistency for this factor across the stories was high ($\propto > .40$) and so all stories were used. Again, independent sample t-tests were used and Levene's test for the homogeneity of variance was observed.

Table 7.9 : Means and SDS of secure vs insecure attachment with mother at 12 months for each story on Discipline/Punishment factor.

Story Stem	**Means (SD)**		**df**	**T-value**	**Significance**
	insecure	**secure**			
Spilled Juice	.2037 (.25)	.3299 (.31)	83	1.98	.05*
Mother's Headache	.0833 (.16)	.1633 (.20)	82.71	1.99	.05*
Three`s a Crowd	.1204 (.19)	.1054 (.16)	83	.38	.70
Burned Hand	.1806 (.22)	.2721 (.26)	83	1.66	.10
Lost Keys	.0556 (.16)	.1156 (.20)	81.51	1.49	.14
Sweet Shop	.3148 (.21)	.2959 (.24)	83	.37	.71
Separation	.0231 (.08)	.0272 (.09)	83	.21	.83
Reunion	.0185 (.08)	.0646 (.18)	72.75	1.54	.12
Bathroom Shelf	.1528 (.23)	.2041 (.24)	83	.97	.33
Exclusion	.0602 (.16)	.1190 (.20)	82.43	1.50	.13
Biscuit Tin	.2593 (.26)	.3571 (.26)	83	1.68	.09

Note : * $p < .05$ (two-tailed levels of significance)

From the table above (Table 7.9), it can be seen that two stories, Spilled Juice and Mother`s Headache, are significant for this factor at a level of $p = .05$. There is also a

trend indicated for the Burned hand (p = .10) and the Biscuit Tin Story (p = .09).

7.3.3 Infant-mother data per variable

In the spirit of investigating this relatively new and unexplored measure thoroughly, the individual variables comprising the MacArthur Narrative Coding System will be examined in detail in relation to infant-mother security of attachment. Table 7.10 presents the results of the independent sample t-tests and the content and parental representation variables of the MacArthur Narrative Coding Scheme. As usual, Levene`s test for the homogeneity of variance is observed.

Table 7.10 : Means and SDS for the content and parental representation variables grouped by insecure vs secure attachment classification with mother at 12 months (n=86).

Variable	**Means (SD)**		**df**	**t-value**	**p**
	insecure	**secure**			
Affection	.1136 (.14)	1150 (.14)	83	.05	.96
Dishonesty	.1010 (.14)	.1076 (.10)	83	.24	.80
Guilt/reparation	.0379 (.07)	.0501 (.09)	83	.63	.53
Negative atypical response	.0627 (.10)	.0555 (.11)	83	.30	.76
Excludes other	.0960 (.14)	.1577 (.15)	83	1.88	.06
Physical aggression	.1263 (.17)	.1262 (.13)	83	.00	.99
Positive atypical response	.0555 (.11)	.0694 (.08)	83	.63	.53
Physical punishment	.0707 (.09)	.1039 (.15)	83	1.13	.26
Disciplining father	.1010 (.10)	.1150 (.11)	83	.58	.56
Disciplining mother	.2273 (.13)	.3173 (.18)	83	2.66	.009**
Positive mother	.1338 (.12)	.1354 (.13)	83	.06	.95
Shame other	.0884 (.10)	.1299 (.14)	82.98	1.45	.15
Verbal punishment	.2197 (.13)	.2968 (.19)	82.76	2.19	.03*

Note : * p ≤ .01 ** p ≤ .001 (p values are based on two-tailed tests)

Of the content and parental representation variables. Table 7.10 shows that two are significantly related to the infant's security of attachment with mother at 12 months. These are 'disciplining mother' (p = .009) and 'verbal punishment' (p = .03); not surprising given that these two variables are included in the Discipline/Punishment factor which proved significant (above). A trend appears for the variable 'excludes other', also included in the Discipline/Punishment factor.

Table 7.11 presents the results of the independent sample t-tests for the performance variables of the MNCS. As usual, Levene's test for the homogeneity of variance is observed.

Table 7.11 : Means and SDS of performance variables grouped by insecure vs secure attachment with mother at 12 months by (n=89).

Variable	**Means (SD)**		**df**	**t-value**	**p**
	insecure	**secure**			
Role of parent	1.6914 (.47)	1.8691 (.42)	86	1.86	.06
Child's understanding of conflict	1.0335 (.15)	1.0600 (.15)	86	.79	.43
Directness of performance style	1.8062 (.34)	1.9582 (.15)	48.43	2.50	.01*
Responsivity to examiner	2.6005 (.52)	2.7909 (.38)	65.20	1.90	.06
Involvement of examiner	1.4665 (.30)	1.4255 (.26)	86	.67	.50
Investment in performance	2.1699 (.72)	2.2127 (.66)	86	.29	.77
Denial	.3086 (.19)	.2600 (14)	86	1.33	.18
Adaptiveness of response	1.6100 (.37)	1.7800 (.39)	86	2.06	.04*
Narrative coherence	2.6053 (.52)	2.7564 (.51)	86	1.35	.18
Control	.1643 (.26)	.0709 (.13)	52.79	2.01	.05*
Joy	.4681 (.24)	.5339 (.25)	86	1.23	.22
Anger	.0534 (.06)	.0594 (.05)	86	.47	.64
Distress	.0199 (.04)	.0285 (.03)	86	.98	.33
Concern	.0431 (.07)	.0442 (.05)	86	.08	.93
Anxiety	.6060 (.30)	.5861 (.26)	86	.34	.73

Note : * $p \leq .05$ ** $p \leq .01$ p values are based on two-tailed tests

As can be seen, two of the performance variables from the MacArthur Narrative Coding System and the additional Adaptive Response code, are significantly related to mother-child attachment at 12 months. 'Directness of performance style' is significant at a level of $p = .01$ with the secure children showing a more direct performance style than insecure children. 'Control' is also significant at a level of $p = .05$ indicating that the insecure children are displaying more control than secure children. 'Adaptiveness of response' is also significant at a level of $p = .04$ with the secure children showing higher levels of adaptiveness. There is also a trend in the direction for secure children to be

more responsive to the examiner (p = .06) and for the secure children to utilize at least one parent doll (p =.06).

7.3.4 Infant-father data and the story stem factors

Independent sample t-tests were run using the infant-father data and the four story stem factors to determine if their might be significant associations as there was with the infant-mother data. Levene's test for the equality of the variances was observed and the values for the equal and unequal groups were used accordingly. The results are presented in Table 7.12 below.

Table 7.12 : Means and SDS of the four story stem factors grouped by infant insecurity vs. security with father at eighteen months.

Factor			**df**	**T-value**	**Significance**
	insecure	**secure**			
Quality/Open response	1.6881 (.30)	1.8044 (.23)	81	1.91	.05*
Discipline/punishment	.1660 (.10)	.1659 (.09)	78	.01	.99
Controlling/negative	.5545 (.25)	.5359 (.17)	81	.39	.70
Positive maternal representation	.1344 (.11)	.1252 (.12)	78	.31	.76

Note : *p ≤ .05 (two-tailed levels of significance)

As Table 7.12 presents, only one of the four factors proved to be significant at the p ≤ .05 level, that of Quality/Open Response. This result reveals that it is the children who were judged to be securely attached to their father at 18 months of age who are able to give higher quality and more open responses to the story stems at age 5 years than the

children classified as insecure with their father at 18 months of age.

7.3.4a Post hoc analyses

Again, given that there were significant associations between one of the four factors at the insecure versus secure level of categorisation, the next question to be addressed is, would the differences in the children`s responses to the story stems be associated with the more specific categories of the infant-father insecure classifications ? As there are no children in the sample who were classified resistant with father at eighteen month it is not possible to examine the original three-way classification of Ainsworth's. Therefore, the first analysis of variance considers possible differences or variations between secure, avoidant and disorganised types of insecure classifications of attachment and is presented below in Table 7.13. Levene's test for the homogeneity of variance was observed and indicated a parametric one-way analysis of variance would be the appropriate test.

Table 7.13 : Means and SDS of the four story stem factors grouped by three classifications of infant attachment security with father at 18 months.

Factor				**df**	**f-ratio**	**f-prob**
	avoidant (n=24)	**secure** (n=55)	**disorganised** (n=4)			
Quality/Open response	1.6776 (.30)	1.8157 (.22)	1.6831 (28)	2,80	2.73	.07
Discipline/punishment	.1618 (.10)	.1720 (.09)	.1061 (10)	2,77	.84	.43
Controlling/negative	.5571 (.25)	.5357 (.17)	.5277 (.08)	2,80	.10	.90
Positive maternal representation	.1302 (.11)	.1279 (.12)	.1136 (.09)	2,77	.03	.96

Table 7.13 shows that there are no significant differences. There is a trend in the direction of secure children giving more Quality/Open responses than either the avoidant or disorganised children, however, caution in accepting these results is urged as group numbers for the disorganised group is so small (n=4) that statistical analysis is meaningless for this group. Given this, it was decided to do a further analysis excluding the disorganised children from consideration. This is presented below (Table 7.14). Table 7.14 presents the independent t-tests for the avoidant and secure groups with father excluding those children classified as disorganised. Levene's test for the homogeneity of variance was observed and the equal and unequal groups were used as appropriate.

Table 7.14 : Means and SDS of four story stem factors grouped by avoidant and secure attachment with father at 18 months (excludes disorganised children).

	Means (SD)		**df**	**T-value**	**p**
	avoidant (n=24)	**secure (n= 55)**			
Quality/Open response	1.6776 (.30)	1.8157 (.22)	77	2.24	.05*
Discipline/punishment	.1618 (.10)	.1720 (.09)	74	.41	.68
Controlling/negative	.5571 (.25)	.5357 (.17)	77	.43	.67
Positive maternal representation	.1302 (.11)	.1279 (.12)	74	.07	.94

Note : * $p \leq .05$ (two-tailed tests of significance)

It can be seen from Table 7:14 that, once the disorganised children have been excluded from the sample, the result for the Quality/Open factor is once again significant ($p = .05$).

7.3.5 Infant-father data per story

As was done with the infant-mother data above, further analyses were conducted in order to determine if there was any one story or a pattern of stories that was contributing towards the significant result for the Quality/open Response factor. The Quality/Open Response factor was calculated per story (see Chapter Three). Independent sample t-tests were conducted and Levene's test for the equality of the variances was observed and the values for the equal and unequal groups were used accordingly. Table 7.15 below gives us indication of which stories are proving to be important in determining this factor. The Separation Story is excluded from the analysis as the rating for internal consistency was below .40.

Table 7.15 : Means and SDS of secure vs insecure attachment with father at 18 months for each story on Quality/Open Response factor.

Story Stem	**Means (SD)**		**df**	**T-value**	**p**
	insecure	**secure**			
Spilled Juice	1.7978 (.33)	1.8649 (.35)	81	.81	.42
Mother`s Headache	1.6556 (.33)	1.6705 (.32)	81	.19	.84
Three`s a Crowd	1.8067 (.40)	1.7711 (.38)	81	.38	.70
Burned Hand	1.7333 (.34)	1.8295 (.33)	81	1.19	.23
Lost Keys	1.7867 (.30)	1.8630 (.35)	81	.94	.34
Sweet Shop	1.6333 (.32)	1.6743 (.29)	81	.56	.57
Reunion	1.7111 (.47)	1.9224 (.36)	81	2.20	.03*
Bathroom Shelf	1.7044 (.44)	1.8870 (.29)	81	2.20	.03*
Exclusion	1.4533 (.48)	1.7989 (.32)	33.42	3.28	.002**
Biscuit Tin	1.7267 (.46)	1.8410 (.36)	81	1.20	.23

Note : * $p < .05$ (two-tailed levels of significance)

Three stories proved able to differentiate the insecure from the secure children: Reunion story, Bathroom Shelf and Exclusion were all significant. The results show that, in all three stories, secure children have stories that are more open and of higher quality than the insecure children.

7.3.6 Father-data per variable

The individual variables comprising the MacArthur Narrative Coding System will be examined in detail in relation to infant-father security of attachment. Table 7.16 presents the results of the independent sample t-tests for the content and parental representation variables of the MNCS grouped by insecure versus secure attachment with father at 18 months. As usual, Levene's test for the homogeneity of variance is observed.

Table 7.16 : Means, SDS and levels of significance for the content and parental representation variables by insecure vs secure attachment classification with father at 18 months (n=86).

Variable	**Means (SD)**		**df**	**t-value**	**p**
	insecure	**secure**			
Affection	.1383 (.13)	.1116 (.14)	78	.76	.44
Dishonesty	.1146 (.14)	.0925 (.11)	78	.73	.46
Guilt/reparation	.0474 (.09)	.0415 (.08)	78	.27	.78
Negative atypical response	.0359 (.09)	.0681 (.11)	78	1.16	.25
Excludes other	.1265 (.12)	.1372 (.16)	78	.28	.78
Physical aggression	.1502 (.18)	.1196 (.13)	78	.81	.42
Positive atypical response	.0843 (.13)	.0559 (.08)	78	1.13	.26
Physical punishment	.0672 (.09)	.1037 (.15)	78	1.08	.28
Disciplining father	.0949 (.10)	.1164 (.11)	78	.77	.44
Disciplining mother	.2846 (.16)	.2855 (.17)	78	.02	.98
Positive mother	.1304 (.11)	.1388 (.13)	78	.26	.79
Shame other	.1621 (.15)	.0861 (.11)	32.49	2.16	.03*
Verbal punishment	.2609 (.15)	.2663 (.18)	78	.13	.90

Note : * $p \leq .05$ (p values are based on two-tailed tests)

Of the content and parental representation variables, Table 7.16 shows that only one is significantly related to the infant`s security of attachment with father at 18 months. This is `shame other' ($p = .03$). The table below (Table 7.17) presents the results for the performance variables in relation to father-child attachment.

Table 7.17 : Means and level of significance for the performance variables by insecure vs secure attachment to father at 18 months (n=89).

Variable	**Means (SD)**		**df**	**t-value**	**p**
	insecure	**secure**			
Role of parent	1.6909 (.54)	1.8292 (.40)	35.92	1.14	.26
Child's understanding of conflict	1.0436 (.15)	1.0486 (.16)	81	.13	.89
Directness of performance style	1.8073 (.34)	1.9201 (.23)	34.24	1.51	.14
Responsivity to examiner	2.5236 (.60)	2.7759 (.35)	31.43	1.93	.06
Involvement of examiner	1.4436 (.28)	1.4248 (.28)	81	.28	.78
Investment in performance	2.1564 (.86)	2.2038 (.61)	35.07	.25	.80
Denial	.2182 (.12)	.3150 (.18)	81	2.43	.01*
Adaptiveness of response	1.5345 (.34)	1.7931 (.40)	81	2.81	.006*
Narrative coherence	2.5927 (.56)	2.7367 (.52)	81	1.12	.26
Control	.1491 (.24)	.0878 (.18)	81	1.27	.20
Joy	.4703 (.23)	.5162 (.26)	81	.75	.45
Anger	.0606 (.05)	.0585 (.06)	81	.15	.88
Distress	.0303 (.04)	.0225 (.03)	81	.80	.42
Concern	.0485 (.09)	.0413 (.05)	81	.45	.65
Anxiety	.6048 (.29)	.5893 (.28)	81	.23	.82

Note : * $p \leq .01$ ** $p \leq .001$ (p values are based on two-tailed tests)

As can be seen, one of the performance variables from the MacArthur Narrative Coding System is significantly related to father-child attachment at 18 months. 'Denial' is significant at a level of $p = .01$ with the secure children showing higher levels of denial. 'Adaptiveness of response' is also highly significant at a level of $p = .006$ with the secure children showing higher levels of adaptiveness. There is also a trend in the direction for secure children to be more responsive to the examiner ($p = .06$).

7.4 DISCUSSION

The aim of this chapter was to investigate possible associations between a behavioural measure of attachment in infancy and a semi-structured narrative task at five years of age. As has been suggested earlier in this thesis, attachment theory is of great importance when discussing the link between the parent-infant relationship and the child's developing understanding and skills in the world outside of that relationship. Early attachment theory proposes that an individual's early attachment history becomes transformed or integrated into internal representations and that these representations have predictable implications for experiences. The question of whether a behavioural assessment of attachment in infancy could predict the outcome of the child's responses to a narrative task four years later has been answered. The results described above are most promising and exciting and confirm that there does appear to be significant reflections of both the early infant-mother and infant-father relationship within the narratives of preschool children.

7.4.1 Infant-mother data

When considering the infant's attachment classification to mother measured at 12 months of age by Ainsworth's Strange Situation in binary form, that is insecure or secure, two of the four factors derived from the story stems proved to be significant as predicted. To remind the reader, the Quality/Open Response factor assess the coherence of the narrative, responsivity to the examiner, directness of performance style and the

child's understanding of the conflict. The Discipline/Punishment factor includes such items as physical and verbal punishment, representations of a disciplining mother and father, shaming and excluding the other.

There is a strong association for secure children to give more responses that are considered to be of a higher quality and more open than children judged insecure. There was an even stronger association for secure children to use more themes of discipline and punishment in their narratives than insecure children. These results were true even after the possible interaction effect of father's social class was taken into account.

In order to explore the nature of these effects in more detail and to see if differences could be distinguished between the separate groups of insecure children further post hoc analyses were undertaken. Mary Ainsworth's original three category system was first examined. This system takes those children deemed insecure-disorganised and forces them into one of the three original categories. One significant result was obtained from this exploratory investigation; of the insecure-avoidant and insecure-resistant groups, it is the resistant children who were least likely to tell stories judged to be open and of high quality. When an analysis of the sample was conducted utilising the four way system of categorisation, that is, including the insecure-disorganised children, it appears that the results are non-significant. In considering the results for the four-way classification system it must be pointed out that group sizes for the insecure-resistant and insecure-disorganised groups were, unfortunately, too small to reach reliable conclusions.

The insecure-disorganised classification is one which has been added most recently to observational rating systems and remains in need of further empirical research regarding its nature and function. Because it is possible that the insecure-disorganised children were obscuring/skewing the results an analysis was made which excluded them from consideration. The result was that the Quality/Open Response factor remains significant only at the level of a trend. We may speculate from looking at the mean scores that it is the children who are forced-resistant that seem to be having trouble responding in a high quality and open manner. Regarding the Discipline/Punishment factor the story is reversed. The result is significant with the secure children remaining most likely to use themes of discipline and punishment in their stories. Insecure-resistant children are the least likely to give responses that include themes of discipline and punishment. Again caution is urged when interpreting results of the three-way and four-way categories of classification as the group sizes for the insecure-resistant and insecure-disorganised are small.

Why were there not significant results for the Controlling/Negative and Positive Maternal Representation factors ? It was predicted that the insecure children would give more responses of a negative and controlling nature than secure children and that secure children would give more responses containing positive maternal representations. The Controlling/Negative factor assesses responses for themes of physical aggression, investment in the performance, control and negative atypical response; the Positive Maternal Representation factor, for affection and positive maternal representations. When the individual variables were examined, control was significant and it was the insecure children who were using this strategy more than the secure group. However, it is likely

that the main reason the Controlling/Negative factor failed to provide results is due to the non-clinical nature of the sample.

A secondary aim of this chapter was to investigate the question of whether particular stories might be better at distinguishing the insecure from the secure with mother groups ? It was predicted that three stories dealing with attachment related issues, Burned Hand, Separation and Reunion would do so but this was not the case. From the analyses it appears that the Spilled Juice story, Burned Hand, Exclusion and Biscuit Tin were the stories that best predicted the child's security of attachment to mother when thinking about the quality and openness of the child`s response. However, the Reunion story did indicate differences in the insecure and secure children for attachment to father in infancy. Are these stories the ones that address the child at just the right level of interest and anxiety for this age group ? As an administrator of many of the stems for example, Lost Keys seemed to the one arousing the most anxiety in the children. It could be hypothesised that for children of this age the emotional context of this story proved to be too anxiety provoking regardless of attachment classification.

If one considered themes of discipline and punishment it was the Spilled Juice story and Mother's Headache (possibly Biscuit Tin and Burned Hand as well) which proved to be significant in identifying those children who were securely attached to mother in infancy.

In terms of the individual variables, disciplining mother, verbal punishment,

directness of performance style, adaptiveness of response and control proved to the variables associated to security of mother in infancy. Of these adaptiveness of response was designed to assess the overall and so, in some ways corresponds to the quality/open factor.

7.4.2 Infant-father data

Turning to the infant-father relationship - whereas two of the four factors derived from the story stems were associated with infant-mother attachment only one of the four factors is associated with the attachment to father measured at eighteen months. Children who were assessed as securely attached to father in infancy give higher quality and more open responses on the narrative task at age five. This remained true when the insecure-disorganised children were removed from the analysis.

When investigating the question of whether particular stories might be better at distinguishing the insecure from the secure with father groups on the Quality/Open Response factor it was the Reunion Story, Bathroom Shelf and Exclusion that were the stories that did so. The Reunion Story was one of those predicted to result in the secure children being able to give higher quality and more open responses and that is what was found. Unfortunately, the internal consistency for this factor in the Separation story was not high even to yield reliable statistical results. The association between the Exclusion story and security of attachment was particularly high on this factor with secure children able to give more open and qualitatively higher responses. From a psychoanalytic perspective, this story taps into a fundamental developmental task regarding Oedipal

development and triangular relationships. Are those children who are deemed secure in their relationship with father more able to understand and address this intra psychic conflict in a direct and coherent manner than those judged insecure with father in infancy ?

7.4.3 Differences in the infant-mother and infant-father findings

The quality and openness of the children's narrative response was found to be significantly associated with both the infant-mother and infant-father attachment classification. It appears that this factor captures elements of the child's ability to construct a narrative at age five that is related to their quality of their relationship with the parents in infancy. Rather surprisingly, the discipline and punishment themes so strongly associated to the infant's classification with mother at one year, were not found to be related to the infant`s attachment to father. This could be suggestive that the primary relationship with mother has a stronger influence on the internalisation of values related to discipline.

Oppenheim at al (1996) propose a transactional theory which might go some way towards explaining why there are differences between the mother and father results. In their study comparisons were made between children`s narratives with mother-child and father-child co-constructed narratives. Although their study did not involve attachment history data, they found that there was a pattern of separate contributions from children's

interactions with their mother and their fathers to the coherence of their independent narratives and to the number of prosocial themes they constructed. They suggested that the qualities of the parent and child co-constructed narratives are 'emergent properties of reciprocal exchanges between parents and children and cannot be reduced to emanating or residing in one or the other'. According to this view, these emergent properties are internalised by children and carried over to new contexts such as independent narrative construction (Oppenheim et al, 1996). This is similar to object-relations and attachment thinking described earlier in this thesis whereby aspects of the separate infant-mother and infant-father relationship are internalised by the infant and transformed into internal representations that guide behaviour.

In conclusion, an exciting aspect of the findings in this chapter is that the story stems seem to be tapping into an aspect of the early infant-parent attachment relationship that is reflected in the child narratives at age five. What emerges quite strongly is that there is something about children who have had secure relationships with both parents in infancy that enable them to give higher quality responses. The next chapter investigates the influence of the parents' own internal working models of attachment, assessed prenatally on the child narratives.

CHAPTER EIGHT

ASSOCIATIONS BETWEEN THE MACARTHUR STORY STEM BATTERY AND THE PARENTS' ATTACHMENT CLASSIFICATION

8.1 INTRODUCTION

This chapter presents the data regarding the assessments of the parent's adult attachment classification as assessed by the Adult Attachment Interview (Main et al, 1985) before the birth of the target child. The Adult Attachment Interview has been described in Chapter One in some detail. This instrument measures attachment security by using a semi-structured interview about the parent's perceived experiences about their childhood. The attachment data reported in this chapter differs from that reported in the two previous chapters; Chapters 6 and 7 were concerned with assessments of the dyadic relationship between parent and child assessed from behaviour. The Adult Attachment Interview assesses only the adult subject's current state of mind with respect to attachment and relationship history. While the Strange Situation and the Adult Attachment Interview could both be described as a means for assessing offspring's (either infant or adult offspring) representations of his/her relationship with parents (Benoit, Parker & Zeanah, 1997), the Adult Attachment Interview does not measure actual experiences of a parent-child relationship but attempts to measure the parents' representations of their experiences of being parented through the analysis of the semi-structured interview. This chapter explores the possibility of a link between the parents' internal working models of attachment, as measured by the Adult Attachment Interview, *before* the birth of the target child and the narratives of the children at age five years.

Parents' representations of their own attachment history for their own child's social development is acknowledged to be highly important (Fonagy, Steele & Steele, 1991; Main, 1994). However, the literature has also generally conceptualised adult

attachment as a somewhat more indirect and distant factor that is mediated by such factors as parental responsiveness, family harmony and parent-child attachment quality.

Similar to the AAI, the story completion task provokes children to think about the possibility of distressing events that may have happened to them in real life (for example, an injury or separation) and assesses how the child deals with such a situation. The presentation of story stems may activate the attachment system in ways not dissimilar to AAI questions such as 'what did you do when you were hurt as a child ?'

From a communication perspective on attachment representations, AAI classifications appraise an individual's ability to consider and discuss attachment issues with emotional openness and coherence (Bretherton, 1995c). The MacArthur story stems are asking children to consider and discuss emotionally charged issues, including those related to attachment. For example, the Separation and Reunion stories, as well as Burned Hand, relate directly to the attachment construct. Separation asks the child to show and tell what happens after the parents leave on a short trip and Reunion asks them to say what happens immediately upon their return. In the Burned Hand story a child is told not to touch the hot stove but does so and injures their hand. As well as thematic content of the stories, the coding scheme used here (and described in Chapter Three in detail) also attempts to assess the quality of the child's ability to consider and discuss these issues. In particular, it is the Quality/Open Response factor scale derived from the factor analysis in Chapter Three that refers to this aspect. The Quality/Open Response factor is comprised of scales measuring and/or assessing narrative coherence, responsivity to the examiner, directness of performance style, child's understanding of the conflict,

joy and use of parent dolls.

In view of these ideas, it is predicted that the child's responses on the story stems for the Quality/Open Response factor will differentiate those parent's classified as insecure versus secure before the birth of the target child and that those children whose parents' were classified as secure will produce stories of a higher quality. The Controlling/Negative factor addresses combined elements of negative themes such as physical aggression and negative atypical response and controlling behaviour and high investment in the performance in the child responses. In view of the fact that these themes and behaviours appear to be counter to the ability to consider and discuss emotional issues in an open manner, it is predicted that there will be a negative connection between the Controlling/Negative factor and parent security.

The AAI assesses parents' perceptions of their experiences of being parented and a secure adult is characterised by an ability to reflect upon and be objective and non-defensive in their attitude to relationships. These secure-autonomous parents are also aware of the developmental implications of affective and relationship experiences. As such, they may use more authoritative means of disciplining their child because authoritative methods of disciplining are associated with firm rules, demands for mature behaviour, reasoning and negotiating with the child to take into account their point of view and encouraging autonomy (Grusec, 1997). Thus it is predicted that the Discipline/Punishment factor will be positively associated to parents' quality of attachment.

8.2 METHOD

8.2.1 Design and Subjects

The design of this study follows the model tested in the previous two chapters concerned with attachment data. The participants discussed in this chapter are a part of the London Parent-Child Project sample, which has been referred to throughout this text and is summarised below.

Mothers

The original sample (n = 100) of mothers were first-time mothers, well-educated, white and predominantly middle-class. Their median age was 31 years (range of 22 - 42). Seventy-five of the women were born in England, 10 in Scotland or Ireland while 15 were born outside the UK or Ireland, but areas primarily Western and Anglo-Saxon. Eighty-two of the woman were married to the expectant father at the time of recruitment or married subsequently. Twenty-one of the woman represented social class I (professional and managerial); 65 social class II (intermediate occupations); 9 social class III (skilled occupations), and 5 social class IV (partly skilled occupations) according to the criteria of the UK government Office of Population Censuses and Surveys (1980). (See also Steele, H., 1991 & Steele, M., 1990).

Fathers

Like their female partners, the sample of expectant fathers (n=100) constituted a highly homogeneous educated, middle and upper-middle class group. Their median age

was 33 (range 20-57). Eighty-seven of the expectant fathers were from England, five were from Scotland or Ireland and eight were born outside the UK, though none of these countries being markedly different cultures. Twenty-five of the men represented social class I (professional and managerial); 57 social class II (intermediate occupations); 16 social class III (skilled occupations); and 2 social class IV (partly skilled occupations), according to the criteria of the UK Government Office of Population Censuses and Surveys (1980). (See Steele, H., 1991 & Steele, M., 1990).

The loss of parental participants since the initial prenatal assessment amounted to 14 cases which were evenly distributed in terms of maternal AAI classification (five insecure, nine secure), but somewhat skewed toward insecurity in terms of paternal AAI status (seven insecure, six secure). The single greatest identifiable cause of attrition being the fact that the families had moved outside of the UK.

Children

As previously described, ninety-two of the original families agreed to participate in this, Phase III of the Project. The mean age of the children (43 girls and 49 boys) was 61 months (range 59-65 months). Attrition since the 12 month visit was 6 children (or 7 %) and since the 18 month visit was 10 children (or 10 %). One child, whose parents participated pre-natally, was unavailable for the 12 and 18 month visits but then joined the cohort for the 5 year assessment. Eighty-nine of these returning children completed the eleven story stems.

8.2.3 Procedure

This chapter combines data from both the first and the most recent phases of the London Parent-Child Project. During Phase I of this longitudinal project, which was during the last trimester of the target child's pregnancy, each parent completed an Adult Attachment Interview. Ninety-eight of the couples were interviewed in their home and two in the laboratory. The interviews were conducted concurrently in different rooms. (also reported elsewhere in detail, Steele, M, 1990 & Steele, H. 1991). At age five, the children and their parents returned to complete further assessments including the Macarthur Story Stem Battery described in detail in Chapter Three.

The following is a brief reminder of the Adult Attachment classifications (see also Chapter One).

Secure-autonomous (F) - the secure autonomous adult has a state of mind characterised by the high regard given to attachment relationships as influential on subsequent development. They present themselves as self-reliant, objective and non-defensive and appear to have come to terms with past experiences thus permitting a balanced view of relationships.

Insecure-dismissing (D) - insecure-dismissing adults tend to deny negative experiences and emotions or to dismiss their developmental implications. These adults also remember little and have difficulty re-evoking the feelings associated with the experiences they are able to recall.

Insecure-preoccupied (E) - The insecure-preoccupied classification suggests a state of mind indicative of continuing preoccupation with their parents. They appear confused, incoherent and unobjective about relationships and their influence over them. Their anger over past and present experiences does not seem to be resolved and they appear to be enmeshed in their early relationships and unable to proceed beyond them.

Unresolved (U) - These parents appear to be unresolved in their narratives regarding their experiences of either loss or trauma. The transcripts of these subjects are characterised by irrational thoughts, or generally disorganised recollections of the loss or trauma.

As stated, the assessment of the Adult Attachment Interview was carried out before the birth of the child, and studies have also shown the AAI to be stable within individuals over time and even across generations (Benoit & Parker, 1994).

8.3 RESULTS

This segment describes the associations between the parent's attachment security as measured by the AAI before the birth of the target child with the four factors derived from the story stem data. As has been the pattern in previous chapters, the results section will be divided into two main areas describing the data pertaining to mother and then to father. Section One will address the results of the possible differences between the mother's adult attachment classifications assessed before the birth of the child and the

responses that child gave on the narrative story task at age five years. Section two will present the results for the analysis of father's adult attachment classification and the four story stem factors.

8.3.1 Mother data

In order to determine if there is a difference between the children's narratives at age five and the parental attachment classification (measured by the Adult Attachment Interview) an independent samples t-test was conducted. Levene's test for the equality of variance was observed and the values for the equal and unequal groups used as appropriate. The results are presented in Table 8.1 below.

Table 8.1: Means and SDS of the four story stem factors with mother's AAI attachment classification (insecure vs secure) before birth of child subject.

Factor	**Means (SD)**		**df**	**T-value**	**Significance**
	insecure (n = 36)	**secure** (n = 53)			
Quality/open response	1.7357 (.25)	1.8034 (.24)	87	1.25	.21
Discipline/punishment	.1377 (.07)	.1839 (.10)	83	2.36	.02*
Controlling/negative	.5703 (.21)	.5230 (.18)	87	1.12	.26
Positive maternal representation	.1247 (.10)	.1239 (.12)	84	.03	.97

Note: * p< .05 (two-tailed levels of significance)

Table 8.1 above shows that there is one significant result. The Discipline/Punishment factor is associated with mother's attachment classification as

measured by the Adult Attachment Interview. Children whose mothers were classified as secure-autonomous before the birth used more themes of discipline and punishment than those whose parents were classified insecure.

8.3.1a Controlling for father's social class

As father's social class was found to have a main effect related to the Discipline/Punishment factor (see Chapter Four) a two-way analysis of variance was conducted to determine if there is a significant interaction effect of father's social class with mother's adult attachment classification. Table 8.2 below presents the means and standard deviations of the three groups of father's social class with mother's attachment measured during pregnancy for the Discipline/Punishment factor.

Table 8.2 : Means and SD of father's social class and mother's AAI attachment classification with the Discipline/Punishment factor.

	Means (SD)						**F-value (df)**	**p**
	professional and managerial		**intermediate occupations**		**partly skilled and skilled**			
	insecure (n= 9)	secure (n= 13)	insecure (n= 19)	secure (n= 28)	insecure (n= 6)	secure (n= 9)		
Discipline/ punishment	.1195 (.07)	.1678 (.08)	.1380 (.07)	.1710 (.10)	.1641 (.09)	.2593 (.11)	.61 (2,83)	.54

As can be seen from Table 8.2, there is so significant interaction effect between father's social class and mother's adult attachment classification and, therefore, father's social class will not be controlled for in the following analyses of the mother attachment

data.

8.3.2 Post hoc analyses

Given that there was a significant association between one of the factors at the insecure versus secure level of categorisation (Discipline/Punishment; T-value = 2.36. p=.02), it was decided to conduct a post hoc analysis to explore if it might be possible to distinguish differences between the more specific categories of insecurity. In order to address this question, two analyses of variance were conducted. The results of the first are presented in Table 8.3. This table presents the possible differences between the secure and the insecure-dismissing and the insecure-preoccupied classifications of mother. These groupings include mothers who were given a rating of unresolved but were also given a second or 'forced' rating of one of the three original categories. Levene's test was again observed.

Table 8.3 : Means and SDS of story stem factors grouped by three-way classifications of mother's adult attachment interview.

Factor	**Means (SD)**			**df**	**f-ratio**	**f-prob**
	dismissing (n=21)	**autonomous** (n=53)	**preoccupied** (n=15)			
Quality/open response	1.7547 (.20)	1.8034 (.24)	1.7091 (.32)	2,86	.91	.40
Discipline/punishment	.1349 (.07)	.1839 (.10)	.1418 (.08)	2,83	2.47	.09
Controlling/negative	.5624 (.23)	.5230 (.18)	.5815 (.18)	2,86	.66	.51
Positive maternal representation	.1277 (.11)	.1239 (.12)	.1201 (.10)	2,83	.01	.98

Note: two-tailed levels of significance

Table 8.3 indicates that none of the factors remain significant at a level of $p \leq .05$. The Discipline/Punishment factor remains significant only to the extent of a trend ($p = .09$) This trend indicates that children of securely rated mothers remain those who use themes of discipline and punishment the most while children of dismissing mothers appear to use them the least. As there were no significant results, Scheffé's post hoc test was not conducted.

A second post hoc analysis of variance was conducted to explore if it might be possible to distinguish differences between groups for the four-way system of classifying mother's attachment. This differs from the above test as it includes those adults considered to be of the insecure-unresolved category. Levene's test was again observed. However, no significant differences were found between the secure and insecure-dismissing, insecure-preoccupied and insecure-unresolved classifications. The figures for this analysis may be seen in Appendix D.2 Caution is urged in interpreting even this lack of results however as the group size for the unresolved group ($n= 7$) is too small to make statistical analyses reliable.

8.3.3 Father data

The same questions that were addressed for mother`s data in the previous section are now asked of the father data. Independent sample t-tests were repeated this time using the data from the father`s adult attachment classification to determine if there were

differences between the child narratives and father`s attachment for any of the four factors. Levene's test for the equality of variance was observed. The results are presented in Table 8.4.

Table 8.4 : Means, SDS and levels of significance of four factors with father`s AAI attachment classification (insecure vs secure) before birth of child subject

Factor	**Means (SD)**		**df**	**T-value**	**Significance**
	insecure (n = 29)	**secure (n = 59)**			
Quality/open response	1.7245 (.30)	1.8023 (.22)	86	1.36	.17
Discipline/punishment	.1936 (.11)	.1531 (.08)	83	1.82	.07
Controlling/negative	.5424 (.20)	.5427 (.19)	86	.00	.99
Positive maternal representation	.1263 (.12)	.1246 (.11)	83	.06	.95

Note : p values are based on two-tailed levels of significance

There are no significant results for the above analysis. As can be see in the table (Table 8.4), there is a trend for the Discipline/Punishment factor to be significant. It appears that children of fathers who have been judged insecure use more themes of discipline and punishment in their narratives than children of fathers judged secure. This is the opposite result of that found with the mother data. In that instance, children whose mother`s were classified secure used more themes of discipline and punishment

8.3.3a Controlling for father's social class

Although the result above is non-significant there was a trend indicated and so a

cautious approach was decided upon. As was done above with the data pertaining to mother, a two-way analysis of variance was conducted to determine if there is a significant interaction effect of father's social class with father's adult attachment classification for the Discipline/Punishment factor. Table 8.5 below presents the means and standard deviations of the three groups of father's social class with father's attachment measured during pregnancy.

Table 8.5 : Means and SD of father's social class and father's AAI attachment classification with the Discipline/Punishment factor.

	Means (SD)						**F-value (df)**	**p**
	professional and managerial		**intermediate occupations**		**partly skilled and skilled**			
	insecure (n= 4)	secure (n= 18)	insecure (n= 16)	secure (n= 30)	insecure (n= 7)	secure (n= 8)		
Discipline/ punishment	.1553 (.07)	.1465 (.08)	.1799 (.10)	.1480 (.08)	.2468 (.13)	.1989 (.09)	.14 (2,82)	.86

As can be seen from Table 8.5, there is so significant interaction effect between father's social class and father's adult attachment classification and, therefore, father's social class will not be controlled for in the following analyses of the father attachment data.

8.3.4 Post hoc analyses

Given that there was a trend between one of the factors at the insecure versus secure level of categorisation (Discipline/Punishment; T-value = 1.82, p= .07), it was

decided to conduct a post hoc analysis to explore if it might be possible to distinguish differences between the more specific categories of insecurity. In order to address this question two analyses of variance were conducted. The results of the first are presented in Tables 8.6 and 8.7. These tables present the possible differences between the secure and the insecure-dismissing and the insecure-preoccupied classifications of father's adult quality of attachment. Levene's test for the equality of variances was observed and indicated that for the Controlling/Negative and Positive Maternal Representation factors a parametric one-way analysis of variance would be the appropriate test (Table 8.7). However, for the Quality/Open Response and Discipline/Punishment factors there was a significant indication (Levene's 3.55, p= .03 and 3.21, p = .04 respectively) that the homogeneity of variance was skewed and so the equivalent non-parametric test, the Kruskal-Wallis one-anova, was used (see Table 8.6).

Table 8.6: Mean rank of the first two story stem factors grouped by three-way classification of father`s adult attachment interview.

Factor	**Mean rank**			**df**	**h-value**	**p**
	dismissing	**autonomous**	**preoccupied**			
Quality/open response	35.75	46.29	49.23	2	2.77	.24
Discipline/punishment	47.91	40.18	50.73	2	2.46	.29

Note : p values are based on two-tailed levels of significance

Table 8.7 : Means and SDS of story stem factors grouped by three-way classification of father's adult attachment interview.

Factor	**Means (SD)**			**df**	**f-ratio**	**f-prob**
	dismissing (n=18)	**autonomous** (n=59)	**preoccupied** (n=11)			
Controlling/negative	.5703 (.21)	.5427 (.19)	.4969 (.19)	2,85	.47	.62
Positive maternal representation	.1591 (.13)	.1246 (.11)	.0785 (.08)	2,82	1.52	.22

Note : p values are based on two-tailed levels of significance

The above two tables show that there are no significant differences between any of the factors and the three groups of father's attachment classification.

A second post hoc analysis was conducted, as was done with the mother data, to explore if it might be possible to distinguish differences in the groups using the four way system of classifying father's attachment. However, there were no significant differences found between the secure and insecure-dismissing, insecure-preoccupied and insecure-unresolved classifications. The table of results can be seen in Appendix D.2

8.4 DISCUSSION

This chapter presented and examined the final attachment data, regarding parents' adult attachment classification as assessed by the Adult Attachment Interview conducted before the birth of the target child. This section discusses the results of the parental attachment analysis aimed to see if differences could be found between adult

attachment classifications with regard to the responses of the child's play narratives.

Several predictions had been made in relation to the four factors derived from the factor analysis. It was suggested that the semi-structured story stem task had parallels with the Adult Attachment Interview in that both ask the subject to consider how they would respond to questions or prompts that trigger the attachment or attachment-related systems. In also considering the theories of communication in relation to attachment theory it was suggested that those children who parents were considered secure-autonomous, that is, could openly discuss the negative as well as positive features of their childhood experience in a coherent manner, would be able to produce narratives that were also coherent, open and responsive. That is, it was predicted that the Quality/Open Response factor would show differences in the adult attachment classifications. However, this was not confirmed when looking at either mother's or father's attachment classification. Why might such a seemingly logical line of theory not prove to be the case ?

One reason may be that, as mentioned in the introduction, mediating factors such as the infant-parent relationship, which is a dyadic and dynamic one, may influence the line from the parents' ability to tell their own history to their child's ability to construct narratives. Oppenheim et all (1995) make the point that construction of narratives is a interactive process between parent and child. Indeed, evidence that the infant-parent relationship may be a mediating factor is provided in the previous chapter. In Chapter Seven it was shown that the Quality/Open Response factor is significantly related to the quality of the attachment relationship of both infant-mother and infant-father.

Another reason that no significant results were obtained on this scale could be that comparing the Adult Attachment Interview and the story stem task is an over simplification in thinking. The AAI measures complex and subtle issues in discourse and narrative and the MacArthur Narrative Coding Scheme does not. The child's language and actions are not assessed in the same way at all. It might prove an interesting future study to assess the child narratives with a view to discovering discrepancies between what a child might say and what they might enact for instance.

One prediction that was confirmed, with respect to the mother attachment only, was in regard to the discipline and punishment factor. This scale did reveal differences in the mothers' attachment classification in terms of themes of discipline and punishment in the stories. Children whose mother's were secure-autonomous before the birth used more themes of discipline and punishment in their narratives. It may be that the ideas regarding parenting styles of discipline and internalisation of parenting values are accurate, however, this conclusion cannot be drawn yet. Further investigation assessing styles of parenting and disciplining would be necessary and this information is beyond the resources of the study at this time. Caution is also urged with regard to the large number of tests conducted and so the possibility of type one errors must be kept in mind.

The next chapter of this thesis takes a different approach from the ones presented in previous chapters and attempts to apply the theory of attachment to developing profiles for the story stem task.

CHAPTER NINE

INTERACTION OF GENDER AND ATTACHMENT

9.1 INTRODUCTION

Chapter Four examined the relationship between the children's responses to the narratives and several demographic factors including gender. Several main effects were found, not for the four factors, but for some individual elements of the narratives; such variables as negative atypical response, physical aggression, physical punishment, representations of disciplining father, anger and adaptiveness of response showed differences in the means of girls and boys.

Chapter Six explored the relationship between the child's attachment assessed in infancy and the children's narratives and also found several important main effects. This chapter will explore the hypothesis that the attachment classification of the child might have an additional effect beyond that of gender and will consider the combined interaction effects of gender and attachment.

As mentioned in previous chapters, children's narratives demonstrate that by the early school years, boys and girls across social classes have acquired a basic, common vocabulary for describing internal states. When speaking about gender differences in general, there is evidence to support the fact that in interactive behaviours of pre-school children, boys tend to be more aggressive, active and impulsive and that girls tend to be more passive, compliant and prone to anxiety and the need for adult approval (Turner, 1991). Research referring to gender differences in adults regarding their perspectives on relationships has suggested that these differing perspectives stem from the child's earliest experience of relationship. Because girls are mothered by a person of the same gender

they come to experience themselves as less differentiated as boys and suggest that a girls' search for identity is through connection with others. The belief is that girls come to value empathy, caretaking and orientation to the needs of others. In the case of boys, the belief is that because boys are treated as other from the start they must learn to repress their attachment to mother and that their 'relational potential' is inhibited by this process (Chodorow, 1978; Tarullo, 1994).

In a study examining naturalistically gathered stories and narratives from preschool boys and girls, Tarullo (1994) found that the boy who acts or talks aggressively, or who tells stories about characters who do, is not typical of his gender. She suggests that the presence of these 'outliers' among boys suggest that there are different developmental trajectories for boys and girls from different social worlds. However, she does not go into further explanations of what this different 'social' world might consist of. If differing perspectives between genders have originated from the child's earliest experiences of relationship and different developmental trajectories evolve for boys and girls from different social worlds, then one might reasonablely argue that one aspect of the influential early relationship would be quality of attachment.

However, this question, whether the quality of child-parent attachment may lead to different predictions for boys and girls, has been a hitherto neglected question in the literature (Turner, 1991). One study that does point to gender and attachment differences that appear in the preschool years investigated concurrent links between attachment and peer interactions. The study examined four-year-old children whose attachment status was measured using the modified Strange Situation described in

Chapter 6 (Cassidy and Marvin, 1989/92). Turner (1991) found that individual differences in observed behaviour in preschool were related to the quality of the mother-child attachment relationship as concurrently assessed, particularly for boys. Insecurely attached boys made frequent attempts to control and influence others, they showed less positive behaviour such as helping and sharing and they showed more aggressive behaviour. They also threatened, criticised and excluded others during peer games. Insecurely attached girls showed significantly more positive expressive behaviour such as smiling and expressing pleasure with peers than secure girls. This behaviour was interpreted as a way of avoiding conflict and/or exclusion and could be seen as submissive behaviour.

The aim of the current study is to investigate whether the differences found in previous chapters regarding attachment classification and children's narratives might have an added effect when combined with gender. Consideration of both attachment and gender in terms of the small amount of empirical work in this area results in the following predictions; that insecure boys will be more controlling and have more themes of aggression and exclusion of others and that insecure girls will have more representations on the Positive Maternal Representation factor.

9.2 METHOD

9.2.1 Sample and Design

The participants discussed in this chapter are the 89 children who have been referred to throughout this text and are a part of the London Parent-Child Project sample.

Infant-mother attachment

When the sample of child subjects is examined in more detail with regard to gender and attachment classification it can be seen that 26.8 % of the sample are girls who were securely attached to their mothers at one year of age (n=26); 20% of the sample are girls who were insecurely attached to their mothers at one year (n=20); of the boys, 29.9 % were securely attached to mother at one year (n=29); and 22.7% of the boys were insecurely attached to mother at one year (n=22).

Infant-father attachment

Looking closely at the sample in relation to fathers and attachment classification itis found that 31.1% of the girls were securely attached to father (n=28); 16.7% of the girls were insecurely attached to father at eighteen months (n=15); of the boys, 40% were securely attached to their fathers at eighteen months (n=36); and 12.2% were insecurely attached (n=11).

9.2.2 Procedure

The procedure for the administration and coding of the child narratives has been described in detail in a previous chapter (Chapter Three) of this thesis.

9.3 RESULTS

The results are reported in two main sections. The first addresses the results of the analyses of infant-mother attachment classification and its possible interaction effects with gender on the outcome of the children's narrative responses at five years of age. The infant-father attachment classification and possible interaction effects with gender are addressed in the second section. Within each section results pertaining to the four factors derived from the story stems are presented as well as results for each of the individual variables.

9.3.1 Possible interaction effects of gender and infant-mother attachment

A two-way analysis of variance was conducted to consider the interaction effects of security with mother at 12 months and the child's gender upon the outcome for each of the four factors derived from the children's story stem responses. Table 9.1 below gives the F-values and levels of significance for the two-way interaction of gender and attachment classification with mother at twelve months.

Table 9.1: Means and SDS of the two-way interaction of gender and insecure vs secure attachment classification with mother at one year for the four factors.

	Means (SDS)				**F-value (df)**	**p**
	insecure		**secure**			
	girls (n= 17)	boys (n= 21)	girls (n= 23)	boys (n= 27)		
Quality/open response	1.7187 (.25)	1.6864 (.28)	1.8520 (.15)	1.8077 (.27)	.01 (1,87)	.91
Discipline/punishment	.1269 (.06)	.1394 (.07)	.1700 (.08)	.2016 (.12)	.21 (1,84)	.64
Negative/controlling	.5184 (.19)	.5793 (.23)	.5053 (.19)	.5573 (.16)	.01 (1,87)	.91
Positive maternal representation	.1705 (.13)	.0864 (.08)	.1285 (.12)	.1224 (.12)	2.25 (1,84)	.13

Table 9.1 above reveals that there are no significant results for any of the four factors derived from the children's responses to the story stems.

9.3.2 Post hoc analysis

As mentioned in the introduction, the question of whether the quality of child-parent attachment may lead to differences in predictions about girls and boys has been a largely neglected one. Because this is such a neglected area and because main effects for particular variables were revealed (see Chapter 4), a further, post hoc analysis will be conducted to investigate the possible interaction effects of individual variables of the narratives and gender. Table 9.2 below shows the results for the two-way analysis of variance of content and parental representation variables for attachment security and gender. This will be followed by results for the performance variables.

Table 9.2 : Means and SDS of two-way interaction of gender and insecure vs secure attachment classification with mother at 12 months for the content and parental representation variables.

Variables	**Means (SDS)**				**F-value (df)**	**p**
	insecure		**secure**			
	girls (n= 16)	boys (n= 20)	girls (n= 23)	boys (n= 26)		
Affection	.1705 (.16)	.0682 (.10)	.1146 (.14)	.1154 (.13)	2.86 (1,84)	.09
Dishonesty	.1080 (.15)	.0955 (.13)	.0949 (.09)	.1189 (.12)	.43 (1,84)	.51
Guilt/reparation	.0455 (.06)	.0318 (.08)	.0711 (.11)	.0315 (.07)	.44 (1,84)	.50
Negative atypical response	.0327 (.07)	.0868 (.11)	.0261 (.06)	.0815 (.14)	.001 (1,84)	.97
Excludes other	.0739 (.11)	.1136 (.16)	.1146 (.11)	.1958 (.17)	.40 (1,84)	.52
Physical aggression	.0341 (.09)	.2000 (.19)	.0830 (.11)	.1643 (.13)	1.89 (1,84)	.17
Positive atypical response	.0663 (.14)	.0469 (.08)	.0543 (.07)	.0827 (.09)	1.15 (1,84)	.28
Physical punishment	.0341 (.08)	.1000 (.09)	.0672 (.12)	.1364 (.17)	.003 (1,84)	.95
Disciplining father	.0682 (.07)	.1273 (.12)	.0830 (.07)	.1434 (.13)	.001 (1,84)	.97
Disciplining mother	.2443 (.12)	.2136 (.13)	.3320 (.15)	.3042 (.19)	.002 (1,84)	.96
Positive mother	.1705 (.14)	.1045 (.10)	.1423 (.13)	.1294 (.13)	.87 (1,84)	.35
Shame other	.0966 (.10)	.0818 (.11)	.1304 (13)	.1294 (.16)	.05 (1,84)	.81
Verbal punishment	.2443 (.11)	.2000 (.14)	.2925 (.17)	.3007 (.20)	.48 (1,84)	.48

Table 9.2 above indicates that there are no significant results, however, there is a trend appearing for the variable of 'affection'. The narratives of insecure girls (mean=.17; sd=.16; n=16) contain more instances of affection than secure girls (mean=.11; sd=.14; n=23). When looking at the boys we find the opposite; the narratives of secure boys (mean=.11; sd=.13; n=26) contain more instances of affection than insecure boys (mean=.06; sd=.10; n=20). It is also interesting to note that there is almost no difference in the means of the boys (mean=.11; sd=.13; n=26) and girls (mean=.11;

sd=.14; n=23) who are judged to be secure. It is only the insecure children who are showing the differences in means for this variable.

A two-way analysis of variance ws conducted for the performance variables as well, however, there are no significant results for any of the performance variables. Figures for these calculations can be seen in Appendix E.1.

Because of the large number of tests conducted concerning the individual variables, the possibility of type one errors increases and must be kept in mind.

9.3.3 Possible interaction effects of gender and infant-father attachment

A second series of two-way analyses of variance was conducted to consider the possible interaction effects of security with father and the child's gender upon the outcome for each of the four story stem factors. Table 9.3 below shows the F-values and levels of significance for the two-way interaction of gender and attachment classification with father at eighteen months.

Table 9.3: Means and SDS of the two-way interaction of gender and insecure vs secure attachment classification with father at 18 months for the four factors.

	Means (SDS)				**F-value (df)**	**p**
	insecure		**secure**			
	girls (n= 14)	boys (n= 11)	girls (n= 24)	boys (n= 34)		
Quality/open response	1.6952 (.27)	1.6791 (.34)	1.8516 (.14)	1.7711 (.27)	.27 (1,82)	.60
Discipline/punishment	.1795 (.09)	.1485 (.11)	.1338 (.07)	.1892 (.10)	3.13 (1,79)	.08
Negative/controlling	.5082 (.22)	.6134 (.28)	.5043 (.18)	.5583 (.16)	.28 (1,82)	.59
Positive maternal representation	.1643 (.13)	.1091 (.08)	.1420 (.13)	.0992 (.13)	.43 (1,79)	.51

Table 9.3 indicates that there are no significant results, however, unlike the results of the analysis with infant-mother data, there is an indication of a trend for the Discipline/Punishment factor. The narratives of secure boys (mean = .19 , sd = .10, n=33) and insecure girls (mean = .18, sd = .09, n=13) contain more themes of discipline and punishment. Insecure boys (mean = .14, sd = .11, n= 10) and secure girls (mean = .13, sd .07, n= 24) show fewer punishment and discipline themes in their narratives.

9.3.4 Post hoc analysis

As was done above with the infant-mother data, an analyses will be conducted to investigate the possible interaction effects of individual variables of the narratives and gender. Table 9.4 below shows the results for the two-way analysis of variance of content and parental representation variables for attachment security and gender. This wil be followed by the results of the analysis of the performance variables.

Table 9.4 : Means and SDS of two-way interaction of gender and insecure vs secure attachment classification with father at 18 months for the content and parental representation variables.

Variables	**Means (SDS)**				**F-value (df)**	**p**
	insecure		**secure**			
	girls (n= 13)	boys (n= 10)	girls (n= 24)	boys (n= 33)		
Affection	.1608 (.17)	.1091 (.08)	.1288 (.14)	.0992 (.13)	.09 (1,79)	.75
Dishonesty	.1259 (.17)	.1000 (.10)	.0758 (.07)	.1047 (.13)	.79 (1,79)	.37
Guilt/reparation	.0490 (.07)	.0455 (.11)	.0606 (.10)	.0275 (.07)	.43 (1,79)	.51
Negative atypical response	.0070 (.02)	.0735 (.13)	.0354 (.08)	.0918 (.13)	.03 (1,79)	.85
Excludes other	.1538 (.14)	.0909 (.08)	.0682 (.08)	.1873 (.19)	6.03 (1,79)	.01**
Physical aggression	.0769 (.10)	.2455 (.22)	.0606 (.11)	.1625 (.13)	.88 (1,79)	.34
Positive atypical response	.0839 (.14)	.0848 (.11)	.0508 (.08)	.0597 (.09)	.02 (1,79)	.87
Physical punishment	.0490 (.08)	.0909 (.09)	.0530 (.12)	.1405 (.15)	.47 (1,79)	.49
Disciplining father	.0699 (.06)	.1273 (.13)	.0795 (.08)	.1433 (.13)	.01 (1,79)	.90
Disciplining mother	.3077 (.12)	.2545 (.20)	.2879 (.16)	.2837 (.17)	.33 (1,79)	.56
Positive mother	.1678 (.12)	.0818 (.09)	.1553 (.14)	.1267 (.12)	.81 (1,79)	.36
Shame other	.2028 (.13)	.1091 (.16)	.0606 (.07)	.1047 (.13)	4.95 (1,79)	.02*
Verbal punishment	.2937 (.12)	.2182 (.17)	.2538 (.16)	.2755 (.19)	1.19 (1,79)	.27

Note: * $p > .05$ **$p > .01$ (p values are based on two-tailed tests)

There are two rather interesting significant results (Table 9.4 above). The content variables of 'excludes other' and 'shame other' are both significant at a level of $p < .05$. Perhaps this is not surprising given that both of these variables are contained within the Discipline/Punishment factor that showed a trend above (see Table 9.3). The secure boys (mean = .18, sd = .19, n= 33) and the insecure girls (mean = .15, sd = .14, n= 13) use the

theme 'excludes other' more than insecure boys and secure girls. Insecure boys (mean = .09, sd = .08, n= 10) and secure girls (mean = .07, sd = .08, n= 24) use this theme in their narratives less. The picture is different for the theme of 'shame other'. In this case, there is no difference between the mean for the boys. Both insecure (mean = .10, sd = .16, n= 10) and secure (mean = .10, sd =.13, n= 33) boys use 'shame other' equally. There is, however, a marked difference in the insecure and secure girls use of this theme. Insecure girls (mean = .20, sd =.13, n= 13) use this theme more than secure girls (mean = .06, sd = .07, n= 24).

Table 9.5 below presents the figures of the two-way analysis of variance for the performance variables by gender and attachment classification with father at eighteen months.

Table 9.5 : Means and SDS of two-way interaction of gender and insecure vs secure attachment classification with father at 18 months with the performance variables (n=89).

Variables	**Means (SDS)**				**F-value (df)**	**p**
	insecure		**secure**			
	girls (n= 14)	boys (n= 11)	girls (n= 24)	boys (n= 34)		
Role of parent	1.7857 (.44)	1.5702 (.65)	1.8561 (.37)	1.8102 (.42)	.60 (1,82)	.43
Child's understanding of conflict	1.0455 (.14)	1.0413 (.17)	1.0833 (.11)	1.0241 (.18)	.50 (1,82)	.48
Directness of performance style	1.8506 (.27)	1.7521 (.41)	1.9659 (.09)	1.8877 (.29)	.02 (1,82)	.87
Responsivity to examiner	2.5519 (.60)	2.4876 (.64)	2.7803 (.30)	2.7727 (.39)	.06 (1,82)	.79
Involvement of examiner	1.4091 (.27)	1.4876 (.30)	1.4167 (.27)	1.4305 (.29)	.21 (1,82)	.64
Investment in performance	2.0779 (.83)	2.2562 (.92)	2.2311 (.62)	2.1845 (.61)	.43 (1,82)	.51
Denial	.2208 (.15)	.2149 (.06)	.2879 (.16)	.3342 (.19)	.41 (1,82)	.52
Adaptiveness of response	1.6039 (.38)	1.4463 (.27)	2.0000 (.40)	1.6471 (.33)	1.27 (1,82)	.26
Narrative coherence	2.5065 (.57)	2.7025 (.55)	2.8939 (.39)	2.6257 (.57)	3.31 (1,82)	.07
Control	.1472 (.22)	.1515 (.27)	.0505 (.12)	.1141 (.21)	.36 (1,82)	.54
Joy	.4307 (.20)	.5207 (.27)	.5303 (.29)	.5062 (.24)	.84 (1,82)	.36
Anger	.0736 (.05)	.0441 (.05)	.0758 (.07)	.0463 (.04)	.00 (1,82)	.97
Distress	.0281 (.05)	.0331 (.04)	.0278 (.04)	.0187 (.03)	.48 (1,82)	.48
Concern	.0671 (.12)	.0248 (.02)	.0354 (.12)	.0455 (.05)	2.66 (1,82)	.10
Anxiety	.6515 (.27)	.5455 (.31)	.6212 (.27)	.5668 (.29)	.13 (1,82)	.71

A trend for narrative coherence and concern is shown in Table 9.5 above. Girls who have been judged to be secure with father at eighteen months give narratives that are more coherent (mean = 2.89, sd =.39, n= 24) than girls judged to be insecure (mean =

2.50, sd =.57, n= 14). On the other hand, boys judged to be insecure (mean = 2.70, sd =.55, n= 11) give slightly more coherent narratives than secure boys (mean = 2.63, sd =.57, n= 34). Although this result is intriguing, it must be noted that the difference between the mean of these two groups is very low.

9.4 DISCUSSION

This chapter explored the possibility of an interaction effect when gender and attachment classification are combined in relation to the story stem completion task. Very little research has been conducted regarding the combined effects of gender and attachment and so this study makes a notable contribution.

The first result to take note of is that there were no significant interaction effects found for any of the four factor scales with regard to either infant-mother or infant-father data. It was noted in Chapter Four that quantitative differences between boys and girls were not often found and that, with the exception of aggression, boys and girls will look alike on most socio-affective measures (Tarullo, 1994). This appears to be the case in this instance. A possible reason for the non-significant results is gender differences may be related to being in a social group. It is argued that gender segregation is a group process ad that groups may encourage the display or inhibition of stereotypical gender behaviours (Turner, 1991).

Although there were no significant results for the factor scales, there was one trend noted for the Discipline/Punishment factor indicating that boys secure with father at eighteen months used more themes of discipline and punishment in their narratives at age five. This could be suggestive of secure boys being more able than insecure boys to internalise adaptive models of discipline. In support of this, Oppenheim (1997) found that disciplining representations in the narratives are most indicative of children, whether boys or girls, to have the least likelihood of behaviour problems. When it comes to the girls in this study, however, the opposite seems to be true. That is, insecure girls used more themes of discipline and punishment in their narratives than secure girls. The possible reasons for this are not so apparent. Could it be that insecure girls have internalised parental values regarding discipline in relation to their fathers in a more negative and self-punitive way ? Of course, this is speculation as there is no firm evidence, for example parenting and disciplining styles, on which to rely.

Again, it must be mentioned that, because of the large number of tests conducted concerning the individual variables, the possibility of type one errors increase and this must be kept in mind with regard to the results discussed below. When the individual variables were examined some potentially interesting results emerged that will need further investigation in future studies. For example, in relation to attachment with mother at twelve months, a trend was noted for 'affection'. Affection is scored when there is an instance of hugs, kisses, compliments, or praise, such as 'Good girl'. An interesting pattern emerges; insecure girls use more affection themes than secure girls and secure boys use more affection themes than insecure boys. One explanation for the higher use of affection by insecure girls may be related to Turner's finding that insecure girls exhibit

more positive behaviour such as smiling and expressing pleasure as a way of avoiding conflict and/or exclusion. Another of her findings relates to a significant result for this study; Turner found that insecure boys threatened, criticised and excluded others during peer games. However, in our sample, it is the secure boys and insecure girls who refer to this theme more often. Again, the results are not easy to explain. The last significant result for the individual variables is that of 'shame other'. Girls insecure with father at 18 months showed markedly more use of this theme than any of the three other groups.

In conclusion, the above results suggest that there may be an interaction effect of gender and attachment but that future work is need to clarify this possibility.

CHAPTER TEN

PROFILE ANALYSIS

10.1 INTRODUCTION

The study that will be described in this chapter was not included in the original plan of this thesis. The procedure that follows arose in the course of study as a result of discussions regarding the sample of children and the various ways in which they responded to individual stories in relation to their attachment history. The data contained within this chapter are presented purely in the interests of exploration and provoking further thought regarding attachment organisation in preschool children.

The previous chapters have looked at the narrative task in relation to various measures of adaptation and attachment. For example, associations were found between the Child Behaviour Checklist and the Controlling/Negative factor and such individual scales as positive maternal representation, physical aggression and lack of anxiety (Chapter 5). With regard to the attachment data, differences were found between children classified as secure and insecure with both mother and father on several factors and individual scales, particularly the Quality/Open Response and Discipline/Punishment factors (Chapter 7). In one instance, a post hoc analysis was conducted calculating each of the four story stem factors per story in order to discover if any one particular stem might be able to distinguish differences between secure and insecure children (see Chapter 7).

The factors used in these analyses were calculated using the variables across all eleven stories. However, each of the story stems contains a different dilemma or conflict for the child to consider. As was mentioned in Chapter Three, using of all the scales

included in the Macarthur Narrative Coding Scheme in the factor analysis was not done as it would have been misleading. Potentially interesting variables such as compliance and non-compliance were not included in the factor analysis as these could have different meanings within the specific context of each story. For example, non-compliance in the Bathroom Shelf suggests a prosocial motivation while in Mother's Headache it might suggest a defiant or self-interested motive. Although compliance was reliably rated the internal consistency across stories is low and this was another reason for not including it in the factor analysis.

The author's experience in administering hundreds of the stems to the five-year-old children led to observations that some of the children found particular stories to be more anxiety raising than others. For instance, the Lost Keys story, in which two parents are arguing over the loss of keys, seemed to arouse great uneasiness. The Burnt Hand story also raised a great deal of concern in the children and yet some were able to respond in a coherent and organised manner while others were not.

The construct of quality of attachment has not yet been applied to the preschool years with as thorough a developmental perspective as is available for infancy (Crittenden, 1992). The emphasis has been on understanding the meaning of the continuity of patterns from infancy to the preschool years and, indeed, this thesis has examined just that question in several of its chapters. The question remains of how attachment functions in the preschool years and how its function is integrated into the development of the preschool child (Cicchetti, Cummings, Greenberg & Marvin, 1990). It was decided that, along side of analysing the data described in chapters Four to Nine,

another way of approaching the story stems might prove to be interesting and potentially useful in addressing the issue of the construct of attachment in the preschool years.

Therefore, one of the aims of this chapter is to develop a *theoretical* profile for how a child assessed in each of the four attachment classifications might respond to each story of the battery. The second aim of the chapter is to apply these profiles to the sample of children in order to assess how accurately the profiles match with the known infant classification.

10.2 METHOD

10.2.1 Sample and Design

The sample discussed in this chapter is the same sample of 89 five-year-old children who have been previously described in Chapter Three in detail. The children's attachment classification with mother at age one year was assessed in the second Phase of the project using Ainsworth's Strange Situation (Ainsworth, Blehar, Waters & Wall, 1978). At age five years, the children returned for Phase III of the longitudinal Project and completed the MacArthur Story Stem Battery. The children's story completions were coded as described in Chapter Three using the MacArthur Narrative Coding Scheme (MNCS).

10.2.2 Procedure

Development of the profile

As stated, this study involved developing a profile in which each of the variables of the MacArthur Coding Narrative Scheme was considered in relation to the dilemma contained within each story. A prediction was then made about which of the four categories of attachment classification (ie., secure, insecure-avoidant, insecure-resistant and insecure-disorganised) five-year-old children would score high or low (or present or absent) on for each of the variables in each story. For example, the Spilled Juice story asks the child to show and tell what will happen when the child character accidentally knocks juice onto the floor. The rater would then make a judgment regarding which type of attachment classification would score high on say, narrative coherence. It could be argued from theory that a secure child would score high on narrative coherency while an insecure-disorganised child would score low.

Three raters first met to discuss the criteria for making the judgements. The three raters were all familiar with the story stem battery having administered the stories to many children from the ages of 5-10 years. The raters were also familiar with attachment theory and the developmental sequelae of infant attachment. All raters were blind as to the attachment classification of the children.

The raters discussed theories mentioned in the opening chapters of this thesis such as secure base behaviour, communication and affect regulation theories of thinking about differences in attachment and how these might be applied to the children and story stem task. Prototypical profiles for each attachment pattern were created. These are described below.

10.2.3 Prototypical profiles

Secure child profile

- evidence of open communication and a direct style of presentation
- coherent storyline
- responsive to both examiner and task
- little or no denial of conflict within the story, particularly in the high anxiety stories of Lost Keys, Burnt Hand, Separation and Reunion.
- a range of affect expressed ie., there are instances of joy, anger, distress, concern and anxiety
- lack of controlling statement or behaviours
- parent dolls utilised
- a balance of positive and negative representations of parents
- appropriate disciplining representation of parents
- positive themes such as affection, empathy,
- lack of negative themes such as physical aggression, injury and negative atypical response.

Avoidant child profile

- evidence of a coherent storyline and a direct style of presentation
- responsive to task as opposed to the examiner
- evidence of denial of conflicts within some stories, particularly in the Lost Keys, Burnt Hand, Separation and Reunion stories
- little range of affect expressed, particularly a lack of negative affect expressed
- lack of controlling statements or behaviour
- little use of parents dolls
- positive parental representations and a lack of negative parental representations
- disciplining representation of parents
- lack of negative themes
- themes such as compliance and excludes self

Resistant child profile

- mix of coherent and incoherent stories
- indirect style of performance
- highly responsive to examiner as opposed to the task
- preoccupation with conflicts within the stories resulting in a lack of resolution to stories
- a range of affects expressed, particularly negative ones such as distress, anger and anxiety
- some controlling behaviours and statements
- lack of disciplining representations of parents

Disorganised child profile

- incoherent stories and a mix of direct and indirect styles of presentation
- lack of resolution to stories
- responsive to task and examiner
- evidence of controlling statements and behaviour
- evidence of denial of conflicts within stories
- negative affect expressed, particularly distress and fear
- negative themes such as physical aggression, injury and negative atypical responses

To give another example, the rater would consider that in the Burned Hand story the dilemma is of the child receiving an injury as a result of disobedience. The rater then asks him or herself the question, which type of infant-mother attachment will score high on negative atypical response and which type of attachment low, for this story ? The rater then marks on the scoring sheet that insecure-disorganised children will score 'present' for this variable and that securely attached children will score 'absent' (see Appendix F.1). This procedure is followed for all variables.

10.3 RESULTS

10.3.1 Inter-rater reliability

Inter-rater reliability was calculated on all variables in each section of the MacArthur Narrative Coding Scheme. That is, all the variables in the content, parental representation and performance and affect sections of the manual were used in developing the profiles. Each rater considered each variable in relation to the dilemma presented in the story and then made a judgement as to whether a subject might score high (or present) or low (or absent) according to their attachment classification (see Appendix F.1).

There are 18 content variables that proved to be reliably rateable (from Chapter 3) and 11 stories, therefore, there are a total of 198 judgements to be made. For the parental representation section, there are 66 judgements to be made, for the performance variables 99 judgements and 198 decisions for the affect variables. It was decided to retain the original division of the stories into the three periods of presentation, narrative and transition phases for this analysis.

Table 10.1 below presents the variables in the stories in which all three raters agreed. It was decided that only those variables where all three raters agreed on both the present and absent rating in each story would be used for any further analyses. If one looks at the first line of the table below, for example, all three raters judged that the variable 'affection' would be present in the Mother's Headache and Bathroom Shelf stories for secure children (B) and absent (or low) in those stories for avoidant children (A).

Table 10.1 : High (or present) and low (or absent) ratings per variable per story where all 3 raters agreed.

	Story Stems											
		SJ	**MH**	**3C**	**BH**	**LK**	**SS**	**SN**	**RN**	**BS**	**EX**	**BT**
Affection	h l		B A							B A		
Compliance	h l	B A		B C								
Dishonesty	h l									A B		A B
Guilt/reparation	h l			B A								
Non-compliance	h l			C B								
Negative atypical response	h l	D B	D B	D B	D B	D B	D B					D B
Excludes other	h l			A B						A B		
Physical aggression	h l				D B							
Denial	h l			A B	A B	A B	A B					
Responsivity	h l	B A	B A	B A	B A	B A	B A			B A	B A	B A
Role of parent	h l			B A								
Negative paternal representation	h l		D B		D B	D B					D B	
Negative maternal representation	h l		D B		D B	D B					D B	
Control in presentation phase	h l							D B	D B			
Control in narrative phase	h l							D B	D B			
Control in transition phase	h l							D B	D B			
Joy in presentation phase	h l					B A				B A	B A	B A
Joy in narrative phase	h l					B A				B A	B A	

Note: A - insecure-avoidant B - secure
C - insecure-resistant D- insecure-disorganised

What Table 10.1 also illustrates is the main problem that resulted and that is a lack of agreement between raters.

As mentioned above, it was decided to count only those instances where all three raters agreed on both the present and absent rating of each variable for each story. Table 10.2 below presents the percentage of agreement for each section.

Table 10.2 : Percentage of agreement for content, parental representation and performance variables.

	percentage of agreement	
Content variables	18/198	9.09 %
Parental representation variables	8/66	12.12 %
Performance variables	14/99	14.14 %
Affect variables	13/198	6.56 %

As can be seen from the figures above (Table 10.2) agreement is very low, so low in fact that it must be said there is really no agreement between the three raters. As a result of the lack of agreement between raters the study should not proceed beyond this point.

However, as was stated in the introduction, this is an initial investigation based on theoretical assumptions, to see if this line of inquiry is worth pursuing as a future study. As such, it was decided to continue the exploration and proceed to the next step.

10.3.2 Profile analysis

A single profile or template for each attachment classification was constructed as described above in section 10.2.2 using the variables where all three raters agreed. That is, a template for how secure, insecure-avoidant, insecure-resistant and insecure-disorganised children are predicted to respond to each of the stories, was constructed.

The four completed templates were then each compared to the four attachment groups of children in the sample. Pearson correlations were conducted and each correlation was transformed into a z-score, using Fisher's formula, so that the correlations could be added together. A means of the Fisher's z scores was taken for each attachment group and these are presented in Table 10.3 below.

Table 10.3 : Mean correlations of z-scores between the profiles and the four attachment groups of children.

	Secure template	Avoidant template	Resistant template	Disorganised template
Secure children	**.1303**	.1542	.0355	.1007
Avoidant children	.1227	**.1406**	.0392	.0899
Resistant children	.1166	.1266	**.0380**	.1186
Disorganised children	.1536	.1464	.0358	**.0586**

As can be seen from Table 10.3, the mean correlations of the z-scores are very low signifying that the templates failed to correlate with the attachment group for which

they were designed. Not only that, the templates were just as likely to correlate with any other attachment group. For instance, the avoidant template was just as likely to correlate with secure, resistant and disorganised children's responses.

It had been the intention to analyse the difference in the means of the groups, however, as the correlations are so low this was not worth pursuing and further analysis would be meaningless.

10.4 DISCUSSION

The aim of the chapter was to develop a theoretical profile for how a child assessed in infancy with mother might respond to the story stem battery. The second aim of the chapter was to then apply these profiles to the sample of children in order to assess how accurately the profiles matched.

The most obvious result of the experiment, and the first issue that must be addressed, is the failure to achieve reliability between raters. There are two main ways of considering the failure of this study; the first is that the profiles are based on faulty theory about how attachment organisation might manifest itself in the stories of five year old children, and the second, that the prototypical profiles have not been clearly operationalised. While it is acknowledged that much work is needed to understand attachment in children beyond infancy, indeed this is one goal of this thesis, there is

empirical evidence (reviewed in Chapters 1 and 2 and within this thesis) that certain elements of the narratives, such as coherency, responsivity and disciplining parental representations, are related to attachment the favoured explanation for the failure to gain reliability at this time is that the profiles have not been clearly operationalised.

For example, regarding content variables, the three raters tended to agree that secure children would show the least amount of negative atypical responses and that insecure-disorganised children would show the highest number of these bizarre responses. This was felt to be true particularly for stories dealing with attachment related issues such as injury in the Burned hand story or the Separation and Reunion stories. The assumption was that insecure-disorganised children would have no internalised organised strategy on which to fall back in the face of anxiety raising issues such as injury and separation and so give bizarre responses.

In looking at the performance variables section, the raters tended to agree that secure children would show more responsivity to the examiner by smiling, looking at the examiner's face and responding to the story completion task. It was also agreed that avoidant children would show the least amount of responsivity by averting their gaze away from the examiner, showing primarily neutral affect and responding to the task reluctantly.

However, operationalisation of this code in the MNCS manual may not be appropriate to the purposes of this chapter's goal. For instance, the responsivity to examiner scale contains elements of the child responding to both the examiner and the

task. From an attachment theory point of view it may be more accurate to separate these concepts. For instance, theoretically it could be argued that secure children would be able to use their internalised model of secure attachment to enable them to respond to both the task and the examiner in an open and easy manner. However, children with insecure-avoidant patterns of attachment might respond well by focusing their attention on the task rather than responding either positively or negatively with the examiner which would require them to engage with the experimenter. This is similar to what insecure-avoidant children have been observed doing in the Strange Situation; avoiding contact with any real or substitute attachment figure and concentrating on exploring the environment.

However, these ways of thinking about the ways in which the different patterns of attachment might respond did not result in successful development of profiles which correlated well with any of the groups identified in infancy with mother.

Perhaps assessing individual variables of the MNCS in the manner described is not a particularly useful approach. A variable by variable analysis does not give a sense of the overall strategy or approach to resolving the dilemma in the story that the prototypical profiles are attempting to do. One suggestion for further work on this type of analysis would be to clarify the operationalisation of the profiles with consideration given to the above discussion.

Another area worth expanding is the affect section. The MNSC does not make a distinction between coding emotion in the child subject themselves or coding affect that the subject is portraying within the story. From personal experience of administering the

narratives, it is quite a different experience to observe a child who is distressed while attempting to complete the task and observing one who is fully engaged in the task and having the character in the story portraying distress.

In a recent paper yet to be published (von Klitzing et al, 1998), useful comments and changes to the narrative coherence scale have been made but have yet to be applied to a sample of children. The changes they describe may also be useful in separating the elements of the narrative coherence scale that are confusing, that is, that the scale assess both coherence and addressing the conflict.

There is a further problem with using the variable by variable approach. It does not address the problem that so-called negative themes such as injury and physical aggression might be used quite appropriately in the play of children this age. In other words, it is not taken into consideration that how a theme is dealt with could be more important than what the theme is. For example, a child in the Burned Hand story might mention that the sibling also burns their hand resulting in a score for injury. However, one child in the sample had the parents rush both children to the hospital and the injury was dealt with swiftly and empathetically. In another, a child also scored present for injury, however, that subject enacted the child doll repeatedly burning her hand without the parents coming to her aid and no resolution to the incident was provided.

In conclusion, it is believed that the ideas described in this chapter regarding constructing prototypical profiles has merit, however, it must be emphasised that the first and most important problem to be tackled is that of reliability. The following chapter

will describe the final statistical investigations of the data dealt with in the previous chapters of this thesis.

CHAPTER ELEVEN

MULTIVARIATE REGRESSION ANALYSIS

11.1 INTRODUCTION

This chapter describes the final statistical investigations of the data described in the previous chapters of this thesis.

Firstly, a discriminant function analysis was conducted in order to ascertain if the category of attachment membership the subjects belong to could be predicted on the basis of their performance on particular variables. Secondly, a hierarchical cluster analysis was conducted in order to try and identify relatively homogeneous groups of cases based on selected characteristics (SPSS, 1997). Ideally the selected characteristics would result in identifying four separate clusters, each composed of one of the four types of attachment security. If not able to identify between cases of insecurity, the analysis could be expected to identify two clusters of secure and insecure cases.

11.2 METHOD

11.2.1 Subjects

The participants discussed in this chapter are a part of the London Parent-Child Project sample, which has been referred to throughout this text.

11.3 RESULTS

The results are divided into two sections according to the type of statistical test conducted. The first section describes the results of the discriminant function analyses and the second presents the results of the hierarchical cluster analysis.

11.3.1 Discriminant function analysis

In order to determine if a statistical distinction between insecurely and securely attached children (as measured by the Strange Situation) exists which can be accounted for or measured by differences in the means of the children's responses on several factors, discriminant function analyses were carried out. In order to determine if there was any single variable or smaller group of variables with predictive powers for attachment classification the stepwise method of discriminant function analyses was used.

Stepwise discriminant function analyses were carried out on both mother and father data using two different sets of discriminating variables. The first set used was the four factors (Quality/Open Response, Discipline/Puinishment, Controlling/Negative and Positive Maternal Representation) derived from the factor analysis in Chapter Three as the discriminating variables to predict grouping by infant attachment to mother and then to father and by the parental adult attachment classification. The second set of variables used the factors aggregated across the individual stories as the discriminating variables to predict

grouping by infant attachment status and parental adult attachment classification.

The critical minimum F to enter the step-wise analysis is 3.84 and the maximum F to remove from the analysis is 2.71.

11.3.1.1 Predicting groups by infant security classification with mother

For infant security with mother it was determined that 58.82% of the children classified as either insecure or secure in infancy with mother were correctly identified at five years of age by the themes used in their narratives (see Table 11.1 below). For security with mother, one canonical variable was extracted [Canonical R = .373, Wilkes Lambda = .8609, df = 2, X^2 = 12.28, p = .002]. This one canonical variable indicated that two of the factors (Quality/Open Response and Discipline/Punishment) contributed highly to the canonical variable and were the best predictors of infant security.

When the variable for father's social class was also added to the discriminating variables, very little difference resulted (see Appendix G.1) . The same two factors (Quality/Open Response and Discipline/Punishment) were the best predictors of infant security [Canonical R = .381, Wilks' Lambda =.8543, X^2 = 12.59, df = 2, p = .001], predicting 57.65 % of the cases grouped correctly.

Table 11.1: Discriminant function analysis grouped by infant attachment security with mother.

Actual Group	**No. Of Cases**	**Predicted group membership**	
		1	**2**
Group 1	36	15 41.7%	21 58.3%
Group 2	49	14 28.6%	35 71.4%
Ungrouped cases	1	0 .0%	1 100.0%

Percent of "grouped" cases correctly classified: 58.82%

From the table above (Table 11.1) it can be seen that the analysis placed 35 of the 49 secure children in the secure group. Fourteen of the 49 secure children were placed incorrectly in the insecure group. When looking at the insecure predictions, only 15 of 36 children were placed in the correct group while 21 insecure children were incorrectly placed in the secure group. This table indicates that the four factors were better at placing the children secure in infancy with mother in the correct group than the insecure, who were more often identified as secure.

11.3.1.2 Predicting groups by infant security with mother using factors per story

For infant security with mother using the factors calculated per story, it was detirmined that 64.77% of the children classified as either insecure or secure in infancy with mother were correctly identified at five years of age by the themes used in their narratives (see Table 11.2 below). For security with mother, one canonical variable was extracted [Canonical R = .352, Wilkes Lambda = .8760, X^2 = 10.85, df = 2, p = .004]. The most important contribution to the canonical variable is the Quality/Open Response factor in two of the stories (Spilled Juice and Biscuit Tin).

When the variable for father's social class was also added to the discriminating variables, no difference resulted (see Appendix G.1). The variable, father's social class, did not meet the statistical criteria for entry into the analysis. Therefore, the same factor, Quality/Open Response, in the same two stories (Spilled Juice and Biscuit Tin) was the best predictor of infant security.

Table 11.2 : Discriminant function analysis using the factors calculated per story as discriminating variables grouping by infant attachment security with mother per story.

Actual Group	**No. Of Cases**	**Predicted group membership**	
		1	**2**
Group 1	38	17 44.7%	21 55.3%
Group 2	50	10 20.0%	40 80.0%

Percent of "grouped" cases correctly classified: 64.77%

From the table above (Table 11.2) it can be seen that the analysis placed 40 of the 50 secure children in the secure group (80.0%). Ten of the 50 secure children (20.0%) were placed incorrectly in the insecure group. When looking at the insecure predictions, only 17 of 38 children were placed in the correct group while 21 insecure children (55.3%) were incorrectly placed in the secure group. As for the results above using the four factors over all the stories, this table indicates that the factors calculated per story were better at placing the children secure in infancy with mother in the correct group than the insecure, who were more often identified as secure.

11.3.1.3 Predicting groups by infant security classification with father

When using only the four factor scales to predict group membership with regard to infant security with father at eighteen months, none of the factors met the minimum level of tolerance to enter the analysis. As no variables qualified for the analysis it was abandoned.

However, when the variable for father`s social class was entered in addition to the four factor scales, it could be determined that 71.59% of the children classified as either insecure or secure in infancy with father were correctly identified at five years of age (see Table 11.3 below). In this case it is not the themes used in the children's narratives that is the best predictor. For security with father, it seems father's social class is the best predictor of infant security [Canonical R = .231, Wilks' Lambda = .9465, X^2 = 4.15, df = 1, p = .04].

Table 11.3 :Discriminant function analysis grouped by infant attachment security with father.

Actual Group	**No. Of Cases**	**Predicted group membership**	
		1	**2**
Group 1	25	0 .0%	25 100.0%
Group 2	63	0 .0%	63 100.0%

Percent of "grouped" cases correctly classified: 71.59%

Table 11.1 above shows that the analysis placed all 63 of the secure children in the secure group. A positive result until one considers that all 25 of the insecure children were also placed in the secure with father in infancy group. The table indicates that father's social class identifies all the children as secure with father in infancy regardless of their responses to the story stems. This result may be the result of a type one error, particularly considering the next section.

11.3.1.4 Predicting groups by infant security with father using factors per story

The picture is quite different when attempting to predict group membership by infant security with father when the individual stories are entered into the analysis. When father's social class is not taken into account, it was determined that 78.75% of the children classified as either insecure or secure in infancy with father were correctly identified at five years of age by the themes used in their narratives (see Table 11.4 below). For security with father by story, one canonical variable was extracted [Canonical R = .438, Wilks' Lambda = .8075, X^2 = 16.46, df = 2, p = .0003]. The canonical variable is comprised of the positively loaded Quality/Open Response factor and the negatively loaded Positive Maternal Representation factor in the *same* story, the Exclusion Story, and best predicts infant security with father.

When father's social class is added to the equation, the percentage of the children correctly classified increases to 81.25% (see Appendix G.1). The same two factors in the one story remain the best predictors [Canonical R =.470 , Wilks' Lambda = .7782, X^2 = 18.80, df = 2, p = .0001].

Table 11.4: Discriminant function analysis using the factors calculated per story as discriminating variables grouped by infant attachment security with father.

Actual Group	**No. Of Cases**	**Predicted group membership**	
		1	**2**
Group 1	23	9 39.1%	14 60.9%
Group 2	57	3 5.3%	54 94.7%

Percent of "grouped" cases correctly classified: 78.75%

From the table above (Table 11.4) it can be seen that the analysis placed 54 of the 57 (94.7%) secure children in the secure group. Only 3 of the 57 secure children were placed incorrectly in the insecure group. When looking at the insecure predictions, 9 of 23 (39.1%) children were placed in the correct group while 14 insecure children were incorrectly placed in the secure group. This table indicates that the factors calculated across stories are better at correctly predicting secure with father in infancy group membership than insecure group membership.

11.3.2 Predicting groups by parental adult attachment classification

As stated above, discriminant function analyses were also conducted to determine if a statistical distinction between those children whose parents were classified insecure versus secure (as measured by the Adult Attachment Interview) could be accounted for or measured by differences in the means of the children's responses on several factors.

11.3.2.1 Predicting groups by maternal AAI classification

When looking at mother's adult attachment classification (as measured by the AAI), it was detirmined that 67.42% of the children were correctly identified at five years of age by the themes used in their narratives (Table 11.5 below). Again, just one canonical variable [Canonical R = .237, Wilks' Lambda = 9434, X^2 = 4.85, df = 1, p = .02] was extracted comprised of one factor (Quality/Open Response) that was the best predictor of mother's adult security classification.

However, the picture changes when the variable for father's social class is added (see Appendix G.1). The Quality/Open Response factor is no longer the best predictor; the factor for Discipline/Punishment becomes the best predictor [Canonical R = .245, Wilks' Lambda = .9397, X^2 = 5.06, df = 1, p = .02]. The percentage of the grouped cases correctly classified drops to 59.30%

Table 11.5: Discriminant function analysis grouped by mother's AAI.

Actual Group	**No. Of Cases**	**Predicted group membership**	
		1	**2**
Group 1	36	13 36.1%	23 63.9%
Group 2	53	6 11.3%	47 88.7%

Percent of "grouped" cases correctly classified: 67.42%

From the table above (Table 11.5) it can be seen that the analysis placed 47 of the 53 secure children in the secure group. Six of the 53 secure children were placed incorrectly in the insecure group. When looking at the insecure predictions, only 13 of the 36 children were placed in the correct group while 23 insecure children were incorrectly placed in the secure group. This table indicates that the four factors were better at placing the children whose mothers are secure in the correct group than the insecure who were more often identified as secure.

11.3.2.2 Predicting groups by maternal AAI classification using factors per story

When looking at mother's security of attachment using the factors calculated per story it was determined that 69.77% of the children whose mother's were classified as either insecure or secure before their birth were correctly identified at five years of age (see Table 11.6 below). For mother's security, again only one canonical variable was extracted [Canonical R = .417, Wilks' Lambda = 8256, $X^2 = 15.80$, df = 3, p = .001]. There are three

separate factors (Quality/Open Response, Discipline/Punishment and Positive Maternal Representation) in two different stories (Biscuit Tin and Mother's Headache) that best predict mother's AAI classification.

When looking at mother's adult security of attachment using the factors calculated per story as well as taking into account father's social class, the figures remain the same (see Appendix G.1).

Table 11.6 : Discriminant function analysis using the factors calculated per story as discriminating variables grouped by mother's AAI.

Actual Group	**No. Of Cases**	**Predicted group membership**	
		1	**2**
Group 1	35	15 42.9%	20 57.1%
Group 2	51	6 11.8%	45 88.2%

Percent of "grouped" cases correctly classified: 69.77%

From the table above (Table 11.6) it can be seen that the analysis placed 45 of the 51 secure children in the secure group (88.2%). Six of the 51 secure children (11.8%) were placed incorrectly in the insecure group. When looking at the insecure predictions, only 15 of 35 children were placed in the correct group while 20 insecure children (57.1%) were incorrectly placed in the secure group. As for the results above using the four factors over all the stories, this table indicates that the factors calculated per story were better at placing the children whose mother's are secure in the correct group than the insecure, who were

more often identified as secure.

11.3.2.3 Predicting groups by paternal AAI classification

It was not possible to predict group membership for father`s attachment classification as none of the variables, including father's social class, qualified and the so analysis was abandoned.

11.3.2.4 Predicting groups by paternal AAI classification using factors per story

When looking at father's security of attachment using the factors calculated per story it was determined that 68.24% of the children whose father's were classified as either insecure or secure before their birth were correctly identified at five years of age (see Table 11.7 below). The one canonical variable extracted [Canonical R = .234, Wilks' Lambda = 9450, $X^2 = 4.66$, df = 1, p = .03], is comprised of the Discipline/Punishment factor in the Biscuit Tin story and best predicts father's AAI classification.

Taking into account father`s social class makes no difference (see Appendix G.1).

Table 11.7 : Discriminant function analysis using the factors calculated per story as discriminating variables grouped by father's AAI.

Actual Group	**No. Of Cases**	**Predicted group membership**	
		1	**2**
Group 1	27	2 7.4%	25 92.6%
Group 2	58	2 3.4%	56 96.6%

Percent of "grouped" cases correctly classified: 68.24%

Table 11.7 shows that the analysis placed 56 of the 58 secure children in the secure group (96.6%). Only two of the 58 secure children (3.4%) were placed incorrectly in the insecure group. When looking at the insecure predictions, only 2 of 27 children were placed in the correct group while 25 insecure children (92.6%) were incorrectly placed in the secure group. Again, this table indicates that the factors calculated per story were better at placing the children whose father's are secure in the correct group than the insecure, who were more often identified as secure.

11.3.3 Hierarchical cluster analysis

A hierarchical cluster analysis was conducted in order to try and identify relatively homogeneous groups of cases based on selected characteristics (SPSS, 1997). Ideally the selected characteristics would result in identifying four separate clusters, each composed of one of the four types of attachment security. If not able to identify between cases of

insecurity, the analysis could be expected to identify two clusters of secure and insecure cases.

A first dendrogram was generated using the four factors (Quality/Open Response, Discipline/Punishment, Controlling/Negative and Positive Maternal Representation) as the selected characteristics. The dendrogram was analysed in order to determine if the clusters of groups generated were meaningful or not (see Appendix G.2). One can see by looking at Appendix G.2 that there were no meaningful groups identified. As a result any further analyses would be meaningless.

A second dendrogram was generated using the two factor scales that proved significant in distinguishing secure from insecure groups in Chapter 7 (Quality/Open Response and Discipline/Punishment). Would a regression analysis be able to identify relatively homogeneous groups from these two factors ? This second dendrogram was analysed, however, there were again no meaningful groups identified and further analyses were abandoned.

11.4 DISCUSSION

This chapter described the final statistical investigations of the data described in the previous chapters of this thesis.

First conducted was the discriminant function analysis to ascertain if the category of attachment membership the subjects belonged to could be predicted on the basis of their performance on particular variables. The results suggest that the discriminant function analysis is tending to identify the majority of children as secure, however, some interesting result emerged. One of the difficulties could be because there were many more children in the sample secure with mother and father than insecure.

One thing that has emerged and has been consistent throughout the previous chapters is that the Quality/Open Response and Discipline/Punishment factors emerge as the discriminating variables. This seems to be evidence to the validity of these two factors being important in distinguishing secure from insecure groups.

The cluster analysis failed to generate any meaningful clusters and so further analyses were abandoned.

Further discussion of these results follow in the summary and discussion chapter.

CHAPTER 12

CONCLUSIONS

12.1 INTRODUCTION

Early in this dissertation (Chapter 2) research in the field of child development and psychoanalysis was shown to have pursued empirical investigations into the child's mental representations and, despite much developmental research into infant and adult patterns of attachment, there is much work yet to be done regarding understanding the organisation of the inner world of preschool children. This thesis has attempted to add to the information regarding the nature and continuity of attachment patterns and how they might manifest in preschool children.

This final chapter chapter both summarises and brings together the findings of this investigation into the internal world of the young child and shows that there are indeed reflections of infant patterns of attachment in preschool children's narratives. The chapter provides an overview of the confirmed and unconfirmed predicted findings, the post hoc investigations and also makes suggestions for further research.

Nearly one thousand story completions offered in response to emotionally challenging dilemmas presented in the story stems were the focus of this study and many tests were conducted in order to confirm or disconfirm predictions made. As a large number of tests were performed, the chance of type one errors occurring increased so this was kept in mind and care was taken in reporting significant results.

12.2 CONFIRMED FINDINGS

12.2.1 Overview of reliability and data reduction

As stated, this thesis has attempted to add to information with regard to assessing the representational world of the preschool child, particularly with respect to attachment theory, and has confirmed many of its predictions.

One primary aim was to explore the potential of a new research tool, the MacArthur Story Stem Battery, as a method for eliciting/gaining access to the child's internal world and assessing the quality of that world. Previous research had shown that children as young as three years of age could provide coherent resolutions to the dilemmas contained within the stems and that parents influenced the construction of the narratives, however, a thorough investigation of the psychometric properties regarding the tool had been absent in these previous studies.

Thus, an important contribution of the study has been the psychometric analysis of the MacArthur Story Stem Battery and its associated coding scheme, the MacArthur Narrative Coding System. It was demonstrated that, not only could the content themes of the MSSB produce a set of reliable and consistent scales, but that the performance codes could also produce reliable and consistent scales. In addition, those scales could then be aggregated across stories and, on the basis of a factor analysis, be aggregated to form meaningful constructs with high internal consistency.

Four meaningful factors were constructed that suggest four relatively independent psychological dimensions were identified by the factor analysis. This was largely a data driven process which yielded those aggregate scales and yet they reflect conclusions of past theory and research. Distinct factors were found which characterised both the content of and the performance of the children's narratives. The first factor is comprised of narrative coherency, responsivity to the examiner, child's understanding of the conflict and directness of performance style and relates to the narrative and communication viewpoint that emphasises the history of the child's emotional communication and the cognitive bases underlying children's narrative construction (Oppenheim & Waters, 1995). The discipline and punishment factor suggests a view of parents as authoritative and disciplinary without being harshly punitive. This seems to corresponds to research contrasting authoritative parenting with authoritarian parenting, which describes authoritative parents as imposing high standards, firm rules and demanding mature behaviour without resort to excessive physical punishment. The controlling and negative factor picks up elements of both the content and performance of the children's narratives that offers a way to address both the child's representations of thematic content as well as addressing an aspect of behavioural style that are suggestive of features of clinical samples (Buchsbaum, Toth, Clyman & Cicchetti, 1992). The discipline and punishment factor seems to focus on aspects where child and parent are in conflict. Consideration of the fourth factor, a relationship variable that is indicative of maternal warmth and affection, is related to most formulations of the internalisation of values by making a child more willing to accept parental values in order to please the parent and maintain a pleasurable relationship (Grusec, 1997).

12.2.2 Child Adaptation - CBCL

The aim to replicate studies comparing the results of the children's story stem responses to a well-established measure of child adaptation, the Child Behaviour Checklist, proved partially successful. It was predicted that, as this scale contained elements associated with children experiencing difficulties more closely related to clinical problems that are brought to child guidance clinics, it would be associated with the Controlling/Negative factor. This hypothesis was confirmed when looking at father's ratings of the child. As expected, children who scored higher on the dimension suggestive of controlling behaviour, physical aggression and negative atypical responses, tended to be rated by their father as having externalising behaviour problems. This correlation predicted was significant.

12.2.3 Attachment

Bowlby's ideas about the importance of child-parent communication in attachment development are revealed in the recent trend of assessments of attachment, including the use of children's narratives described here. Underlying much of this work is the idea that internal working models influence key characteristics of children's narratives and investigators have interpreted the results of studies described in Chapter Two as supporting the notion that young children construct internal working models with respect to attachment (Oppenheim & Waters, 1995). This study adds to the literature and supports this theory by providing new evidence that the MacArthur Story Stem Battery

can provide a window on earlier attachment relationships.

There were two approaches to the investigation of the internal world with respect to attachment. The first looked at the ability of attachment classifications, both child and adult, to predict the scores on each of the factor scales. The second approach, a multivariate regression analysis, explored the question of which previously assessed attachment variables independently influenced children's narratives at five years.

Although there were differences in the results between mothers and fathers, it was the same two factors that gave positive results confirming the validity of these two factor scales for this sample. With respect to the possible influence of the mother-child relationship as opposed to the father-child relationship, it was anticipated that there would be a possibly greater influence of the mother-child relationship. This assumption appears to be confirmed.

While the possibility of type one errors occurring must always be kept in mind, two of the four factor scales derived from the factor analysis were repeatedly shown to be significant with regard to earlier attachment classifications. These two factors, quality and openness of the response and discipline and punishment, broadly represent both *how* the children communicate their stories and one particular aspect of *what* the children talk about. In this sample of middle-class children , whether or not a child was securely attached to mother at one year was predicted by the level of children's scores at age five on the dimensions of coherence and emotional openness of the story and from examining differences in their representations of discipline and punishment. This was explained in

terms of a communication perspective of attachment theory which describes a line from easy and open emotional communication in infancy to the ability to construct open and coherent narratives about affectively charged issues and to the internalisation of parental values. The developmental line linking sensitive and responsive maternal caregiving in the first year of life to children's representations of a disciplining parent at age five may be indicative of how the meaning of parental sensitivity and responsivity evolves as a function of the child's developmental age and stage.

The discriminant function analysis revealed that these same two factor scales, quality and openness of response and discipline and punishment, are important in predicting group security in infancy with mother, as much as 60% of the time, providing further evidence to support the theory that these two dimensions are important elements in the organisation of attachment in preschool children.

Further evidence in support of claims regarding the importance of the early relationship with parents suggests an additional role for father in terms of promoting coherent, emotionally open and responsive ways of organising narrative. This suggestion is based on the finding that the eighteen month assessment of attachment with father also produced an association with the quality and openness of response scale when dividing the sample into insecure and secure children. Children who had secure relationships with their father in infancy tended to produce direct, coherent and open narratives. By contrast, an insecure attachment in the early father-child relationship, predicted narratives that were more incoherent, indirect, less responsive and less emotionally open. The story

specific findings support this and are discussed below.

12.2.4 Story specific findings

Another contribution of this study as been the exploration for knowledge about aspects of individual stories. Different stories pull for different themes and the post hoc analysis conducted indicated that a few particular stories are best able to distinguish insecure from secure children in this sample. On the dimension of quality and openness of response, Spilled Juice, Burned Hand, Exclusion, and Biscuit Tin are the stories that were significant. In terms of the discipline and punishment dimension, Spilled Juice and Mother's Headache were significant. Both Spilled Juice and Mother's Headache place the child in potentially conflictual situations with mother and so it is not surprising that they relate to the discipline and punishment theme.

The discriminant function analysis was able to predict group membership with a larger percentage of success when the analysis was by story providing evidence that individual stories do pull for different themes and that particular stories may be more related to attachment organisation than others. The discriminant function analysis also indicated that it is the quality and openness of response in the Spilled Juice and Biscuit Tin stories that best predict attachment group membership.

When looking at the child's attachment to father in relation to individual stories it appears that different stories than those for mother best distinguish secure form

insecure children. The Reunion story, Bathroom Shelf and Exclusion stories proved significant at predicting insecure and secure classification.. The exclusion story, in particular, proved highly significant and the discriminant function analysis also supported this finding by being able to predict attachment group membership 79% of the time.

This exclusion story is of theoretical interest. Psychoanalysis has placed great emphasis on the importance of the Oedipal conflict and its resolution. The children in this sample are age five and considered at the height of the Oedipal phase. The results regarding the Exclusion Story indicate that children with secure relationships to father at eighteen months are able to produce responses to this story at age five that show understanding of the conflict, are more coherent and joyous, perform their stories in a direct manner and who are more responsive to the examiner. Is there something about a secure attachment to father in infancy that enables the child to better organise their thoughts and feelings regarding an important developmental and psychological conflict such as the Oedipal conflict four years later ?

It has been suggested that narrative assessments of children's internal worlds are as much a measure of how children construct those narratives about affective themes and communicate those to others as they are assessments of internal representations and working models (Oppenheim & Waters, 1995). This study has provided evidence to support the line of thinking that it may be useful to think about narrative assessments, such as the MacArthur Story Stem Battery, as measuring children's abilities to construct

narratives about emotionally laden, personal topics and to share those narratives with others. The crucial theory based links are between a child's experience of sensitive, open communication with parents, feelings of security, well-modulated affect and coherently organised internal working models of self and attachment figures.

Post hoc analyses proved interesting. The scale describing quality and openness of response was also found to be significant when the sample is viewed from the original three-way classification of secure, insecure-avoidant and insecure-resistant. It appears that the children with a history of security to mother and/or father give responses that are highest on quality and openness and that the children with a resistant history give responses with the least quality and openness. However, it must be kept in mind that, because the group sizes of the insecure-resistant group was so small, these results must remain questionable. It would be necessary to apply these scales to populations containing more resistant and disorganised children before reliable conclusions could be drawn.

The findings for father's social class merit further investigation as so few of the current sample actually come from lower socio-economic classes. However, the results suggest that a story specific analysis is better at predicting which attachment group a child will belong to (over 80% of the time).

12.3 UNCONFIRMED FINDINGS

12.3.1 Demographic characteristics

Other than the one main effect of father's social class on the discipline and punishment factor, there were no associations between demographic factors such as child's age, language abilities and temperament and the child's narratives found. This suggests that the story completions of the children in this sample are not a function of their age, language abilities or temperament. With respect to temperament, it may be that it is not related to the narrative task; however, this cannot be ruled out. One suggestion for further study would be to assess temperament concurrently with the narratives.

12.3.2 Regarding the Controlling/Negative and Positive Maternal Representation factors

Despite the psychometric analysis in Chapter Three successfully yielding four factor scales, only two of those scales proved to provide consistent positive results as described above. One of the remaining two factors, described as the controlling/negative factor, contains negative elements of both how the child performed and content themes to which the child referred. It was predicted that this scale would identify those children who were insecure-disorganised in infancy, however, this did not prove to be the case. Despite one association with externalising behaviour problems on the Child Behaviour

Checklist, the factor failed to distinguish secure from insecure children. This was explained in terms of the non-clinical nature of the population studied. It is hypothesised that this factor would be related to children showing more clinical disturbances and this is supported by the association to externalising problems on the Child Behaviour Checklist. Suggestions for further research would be to apply thee dimensions to clinical populations. Indeed, attempts to do have yielded supporting evidence (Buchsbaum, Toth, Clyman, Cicchetti, & Emde, (1992).

The fourth factor, Positive Maternal Affection, contains two positive elements of the content of the children's narrative. This factor failed to distinguish secure from insecure children on any measure of child or adult attachment assessment. This was explained in terms of the lack of stories which pull for positive themes. When stories that have pulled for positive themes are included, positive themes tend to result more often. For example, two stories which have been used in subsequent studies, Looking for Barney and Gift Giving, have both elicited scorings of affection high above the mean for their sample (von Klitzing, Kelsay & Emde, 1998).

One element of this factor, positive maternal representation, was found to be associated to mother's rating on internalising scale of the Child behaviour Checklist. However, the direction of the association was not expected. Children who scored higher on positive maternal representations were more likely to have internalising behaviour difficulties. This could possibly be a type two error, particularly in view of the fact that other studies have shown the opposite to be true (Oppenheim, Emde & Warren, 1997). Also, there was no evidence from the associations of this variable to the attachment data

to support anything other than a spurious result at this time.

Clearly, further research is needed to better explore the possibilities this technique might have for work with different populations. Work with populations containing larger subgroups of insecure children might yield results as to the usefulness the battery might have in differentiating the insecure groups from one another. Also, work with different types of maltreated samples might have implications for use of the battery as a diagnostic tool.

12.3.3 Modified Strange Situation

The five year assessment of attachment produced no associations to any of the four factor scales either with mother or father. This was discussed in the chapter and the lack of results suggest that the Cassidy and Marvin (1992) scoring of the modified Strange Situation lacks validity.

12.3.4 Gender

This study has also answered a call for information about sex differences (von Klitzing, Kelsay & Emde, 1998). There were no main effects found for gender alone on any of the four factor scales. Post hoc analysis revealed some predicted associations, for

example, in aggression.

There were also no associations regarding the interaction of gender and attachment and the four factors with either mother or father. Individual variables revealed some results but the conclusion reached was that further study was needed.

Mary Ainsworth herself has expressed disappointment that attachment researchers have gone on to do research with the Strange Situation rather than looking at what happens in the home. One suggestion for future research concerning attachment patterns in preschool children is to do just that, return to the home and 'field work' (Ainsworth and Marvin, 1995). Observations resulting from the above might then also be applied to improve the operationalisation of the profiles of the various attachment classifications.

12.4 CONCLUSIONS

The above results support Bowlby's hypothesis that an individual's attachment relationships have consequences for their subsequent development and that both prenatal and infant assessments of attachment have quantifiable reflections of that attachment at

five years of age. These findings were achieved on the basis of administering the well-established Child Behaviour Checklist and the newly developed MacArthur Story Stem Battery.

A limitation of the study was the homogeneous sample population and so the generalisability of the results are limited. Again studies containing larger subgroups of insecure classifications and also high-risk samples are necessary.

It is perhaps the capacity of the MacArthur Story Stem Battery and the accompanying coding scheme, the MacArthur Narrative Coding System, to identify how children respond with respect to coherency, as well as to identify the content of the responses with respect to internalised elements of discipline which underlies the significant findings. The present study takes up the suggestion that it may be useful to think of narrative assessments as measuring children's abilities to construct narratives about emotionally laden, personal topics, and to share then with others (Oppenheim & Waters, 1995).

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APPENDIX A.1

MacArthur Story Stem Battery Protocol

1. **Story Stem**: SPILLED JUICE

Characters: Mother, father, child (Susan/George) and younger same sex sibling (Jane/Bob)
Props: Table, pitcher

Interviewer: 'The family is thirsty and they are going to have some juice. Now, put the family around the table so they can have some juice'. (wait until the figures are placed by the child or interviewer) 'Here's the family drinking their juice. Susan (or George if subject is male) gets up and reaches across the table and, Uh, Oh , s/he spilled her/his juice all over the floor !' (make the child doll knock pitcher onto the floor so that it is visible to the subject)

Interviewer: Now you show me and tell me what happens next ?

Prompts:
(If nothing is done about the juice)
'What happens about Susan/George spilling the juice ?
'Who cleans up ?'
'Does anyone say anything ?'
'How do mum and dad feel about Susan/George spilling the juice ?'

2. **Story Stem**: MOTHER'S HEADACHE

Characters: Mother, child, same sex friend
Props: Couch, chair, television

Interviewer: 'Mom and Susan/George are sitting on the couch watching television.' (mom turns to child) 'Oh Susan/George, I have such a headache ! I just have to turn the television off and lie down. (mom gets up and turns television off) 'Susan/George, can you find something quiet to do for a while ?' (Susan/George respond) 'Okay mom. I'll read my book.' (Mom lies down on the couch and Susan/George sits in the chair to read a book) (Interviewer makes a doorbell sound and moves child figure to answer the door) 'It's Susan/George's friend, Laura/Dave.' Laura/Dave say 'There's this really neat TV show on. Can I can in and watch it with you ?'

Interviewer: Now you show and me and tell me what happens next ?

Prompts:
(If Susan/George don't turn on the television)
Laura/Dave say, 'Oh come on ! I know you'll really like it.'

APPENDIX A.1 (cont)

(If any child turns on the television)
Mother says 'Oh, I have such a headache !'

3. **Story Stem:** THREE'S A CROWD

Characters: Child, same sex younger sibling, same sex friend, mother, father
Props: ball

Interviewer: Mom and dad are over here talking to the neighbours. Susan/George is playing with her/his friend, Laura/Dave and her/his new ball. Show me how they play with the ball. (Allow child to play a moment) Susan's/George's little sister/brother comes running out of the house and says, 'Can I play with you ?' Susan/George says, 'Sure'. But Laura/Dave says, 'No way ! If you let your little sister/brother play, I won't be your friend anymore !'

Interviewer: Show me and tell me what happens next ?

Prompts:
(if request is ignored)
'What about Jane/Bob ? She/he wants to play with them ?
(If Susan/George does not come to sibling's defence)
Sibling says 'But Susan/George, I'm your little sister/brother !'

(If Jane/Bob is immediately allowed to play by Susan/George)
Laura/Dave say, 'But I said I didn't want to play with your sister/brother. I'm leaving !'

4. **Story Stem:** BURNED HAND

Characters: Mother, father, child, younger sibling
Props: Stove, pan, table, chairs

Interviewer: Mom and Susan/George are at the stove. Dad and Jane/Bob are sitting at the table. Mom says, 'We're going to have a really good supper but it's not ready yet. Don't get too close to the stove.' Susan/George says, 'That looks good. I don't want to wait. I'd like some now !' (Susan/George knocks the pot off the stove) 'Ow ! I've burnt my hand ! It hurts !'

Interviewer: Now you show me and tell me what happens next ?

Prompts:
(if no one helps the child)
What about Susan/George's burnt hand ?

(if no response)

APPENDIX A.1 (cont)

What do they do about the burnt hand ?

(If burn is attended to)
Do they say anything about the hurt hand ?

5. **Story Stem:** LOST KEYS

Characters: Mother, father, child
Props: none

Interviewer: Susan/George come into the room and see mom and dad looking at each other like this. Look at my face. (make an angry face for the subject) (mother in angry voice) 'You lost my keys !' (father angrily) 'I did not !' (mother) 'Yes you did , you always lose my keys !' (father) 'Well, I didn't lose them this time !'

Interviewer: Now you show me and tell me what happens next ?

Prompts:
(If no response or argument is ignored)
What happens about mom and dad's argument ?

6. **Story Stem:** SWEET SHOP

Characters: Shopkeeper, mother, child
Props: Counter or shelf

Interviewer: 'Here we have the sweet shop and the shopkeeper. Do you know what's on the shelf ? Candy/sweets. Here comes mom and Susan/George. Susan/George says, 'Oh, sweets ! May I have some ?' Mom says, 'No, you already had some today. Let's go home.' (Mother walks away. Susan/George takes a sweet from the shelf) The shopkeeper says, 'Hey, what are you doing there ?' (Mom turns around)

Interviewer: Now you show me and tell me what happens next ?

Prompts:
(if no response to the stealing)
Susan/George took a candy/sweet. What does mom say about that ?
(if mom responds to stealing)
Does Susan/George say or do anything ?

7. **Story Stems**: SEPARATION

Characters: Mother, father, child, sibling, grandmother
Props: car

APPENDIX A.1 (cont)

Interviewer: 'You know what it looks like to me ? It looks like mom and dad are going on a trip. The car is parked in front of the house. (bring out car) Mom says. 'OK girls/boys, your dad and I are going on our trip now. We'll see you tomorrow. Grandma will stay with you.'

Important: The interviewer should let the subject put the figures in the car and make them drive off. Only intervene if the subject seems unable to make the car drive off. If the subject puts the children in the car say, 'No, only the mom and dad are going.' After the subject (or interviewer if necessary) makes the car drive off, then interviewer puts the car under the table out of sight. If the subject wants to retrieve the car interviewer says, 'No, they're not coming back yet.'

Interviewer: Now you show me and tell me what happens next ?

Prompts:
What do the girls/boys do now that mom and dad are gone ?

8. **Story Stem:** REUNION

Characters: Grandmother, child, sibling, mother, father
Props: car

Interviewer: (in monotone voice) It's the next day and Grandma looks out the window and she says, 'Oh, look girls/boys, I think your mom and dad are home from their trip. I think I can see their car.'

Important: Bring the car with the two parents back out from under the table and set it at a distance from the children. Ie., keep it near the interviewer so the subject has to reach for it and make it drive 'home'.

Interviewer: Now you show me and tell me what happens next ?
Prompts: What do they do now that mum and dad are home ?

9. **Story Stem:** BATHROOM SHELF

Characters: Mother, child, younger sibling
Props: Bathroom shelf, bathtub, toilet

Interviewer: 'Now it's the next morning and dad has gone on an errand. (Bring out the props) Can you guess what room these are for ? The girls/boys are playing in their room over here with their toys. Mum comes in and says, ' Girls/boys, I have to go next door to the neighbours to return something, but I'll be right back. Don't touch anything on the bathroom shelf, okay ? The girls/boys say, 'Okay mum.' Mum goes to the neighbours (put mother doll under the table). Susan/George and Jane/Bob play some more then Jane/Bob jumps up ! 'Ow

APPENDIX A.1 (cont)

! I cut my finger. I need a plaster !' Susan/George says, 'But mum said not to touch anything on the bathroom shelf.' Jane/Bob: 'But my finger, it's bleeding !'

Interviewer: Now you show me and tell me what happens next ?

Prompts:
(If any child gets a plaster)
Mother returns and says, 'Hi, kids, I'm back.'

(If there is no mention of the plaster)
Mother says, 'Jane/Bob, I see a plaster on your finger. I thought I told you not to touch anything on the bathroom shelf.'

(If child does not get a plaster)
Jane/Bob says again, 'My finger's bleeding !'

10. **Story Stem:** EXCLUSION

Characters: Mother, father, child
Props: Couch

Interviewer: Mum and dad are sitting on the couch talking. If subject is female, mother turns to Susan/if subject is male father turns to George and says, 'Mom/dad and I would like some time alone. Will you please go up to your room and play with your toys. Please shut the door so it is quiet. (Allow the subject to move Susan/George away) After the subject moves Susan/George <u>then</u> mom/dad gives mom/dad a hug.

Interviewer: Now you show me and tell me what happens next ?

Prompts:
(If the child goes to his parents)
Mum/dad says, 'We asked to have some time alone.'
(If child complies with request)
Mum/dad says, 'Okay, Susan/George. Thanks for letting us have some time alone.'

11. **Story Stem:** BISCUIT TIN

Characters: Mother, father, child and younger sibling
Props: Table, biscuit tin

Interviewer: Susan/George and Jane/Bob are in the kitchen. Jane/Bob sees the biscuit tin and takes a biscuit. Susan/George says, 'Mum said NO biscuits !' Jane/Bob says, 'Please don't tell mum and dad about it !' You know what ? HERE COMES MUM AND DAD ! (with emotion in voice)

APPENDIX A.1 (cont)

Interviewer: Now you show me and tell me what happens next ?

Prompts:
(If nothing was said about the biscuit being taken)
Mum/dad says, 'I see someone took a biscuit. Who was it ?'

APPENDIX A.2

MACARTHUR NARRATIVE CODING MANUAL

JoAnn Robinson, Linda Mantz-Simmons, Jenny Macfie
and the
MacArthur Narrative Working Group

Note: Additions to the text in this typeface are the results of discussion between the coding team and Linda Mantz-Simmons during the training course at University College, London.

INTRODUCTION

Coding for each of the narrative stems has been divided into 3 sequential phases, namely the presentation, the narrative development, and the transition between narratives phases. The beginning and end of each phase has been defined as follows:

1) Presentation Phase - begins once the examiner begins to deliver the first line of the narrative script. This phase ends once the examiner has presented all the details of the story, has physically released all props, and has prompted the child to finish the story for the first time (ie. using the statement "Show and tell me what happens next").

If the subject picks up a doll or prop during the presentation phase but does not actively engage it in the narrative, do not code it, however, if the subject should attempt to begin the narrative, record this as the beginning of the narrative phase. i.e the presentation and narrative phases may overlap.

2) Narrative Development Phase - begins once the child emits their first response towards the story line. If the child begins the narrative just before the examiner states " Show me and tell me what happens now" and the examiner never delivers this line or delivers it after the child has begun, consider this the beginning of the narrative. A first response would include such things as the child asking questions or picking up the dolls, this would not include the child walking away or just staring at the table, which may be indicators of avoidance. This phase ends one of 2 ways, a) once the child makes a clear statement about the story line being over (ie. they all go to bed), or b) once the examiner indicates that the story is over either verbally (ie. "I have another story") and/or physically (ie. removes the first prop). Choose between these based on the presence or absence of the first choice. If the examiner continues to ask for more of the story after the child has clearly finished and the child then disorganizes or makes shifts in domain stop coding at the point at which the child completed the narrative and only code for responsivity with the examiner until the examiner moves into the transition phase. Think of how long the child has been invested in their story.

3) Transition Between Narratives Phase - begins one of 2 ways, a) once the child has made a clear statement about the story being over, or b) once the examiner has indicated that the story is over. This phase ends once the examiner begins delivery of the first

APPENDIX A.2 (cont)

characters statement for the following narrative. Once the child has finished the last story in the series, give them a minute or two for a Transition phase even though the are finished the narratives, thus providing them with the opportunity to add to or change their previous narrative. Themes that occur during the transition phase should be noted in the comment section.

The Family Birthday narrative is not coded as it is used as an introduction to the testing procedures only. Begin coding by indicating which story stem is being coded and whether it's being done in the home or lab. Proceed to fill in the start time for the first phase, indicate the presence of each content code as it appears, rate each performance section that pertains to the phase you are watching, and note the end time for that phase. The total times for each phase can be calculated once you are finished coding. Proceed through these steps for each phase of the narratives. The Over-All (OA) column on the coding sheet is to reflect the subjects behaviour over-all the 3 narrative phases.

Examiner errors may occur in several ways which will effect how the narrative is to be scored. 1) During the presentation phase a key point in the story may be deleted (ie. in the exclusion story the parents don't kiss). In this case do not code the narrative and write a note under comments as to why the narrative was not coded. 2) During the narrative development phase the examiner may incorrectly deliver a prompt or they may add a prompt that changes the story line. If the child has had time to develop a portion of the narrative, code everything up to the point at which the examiner inadvertently changes the story. Note this in the comment section. If this occurs before the child has had time to begin much of their narrative do not code the narrative section and note this in the comment section. 3) In some situations the examiner may wait too long after the child has completed their story to end the narrative phase and this may cause the child to try and fill in that time with disorganized or incoherent statements. When this occurs, code only the coherent portion of the child's story, record the time at which you stop coding as the end of the narrative phase and note this in the comment section.

Authors David Oppenheim and Sun Park deserve separate recognition for their contribution of the section entitled "Coding of Parental Representations in Narratives".

I. CONTENT THEMES - coding will be based on the presence or absence of the following themes through-out the presentation, narrative development and transition phases of each story. Place a / in the box corresponding to each theme as it occurs only once per narrative. Themes that occur during the Presentation or Transition phases that are not related to the narrative may be noted in the Comments section. These themes may be stated and/or enacted by the subject.

A) NO THEMES: there are no themes evident through-out the narrative.

APPENDIX A.2 (cont)

B) RELATIONSHIP THEMES:

1) COMPETITION (CM) - a dyadic relationship between children striving for the same object or activity. This may include competitive comments, complaints about turns or fairness, or negative comparisons of other to self. This does not include competition over/for the parents attention. Largely verbal, dyadic and between children,

Ex: - "No, I got it"
- "But I can ride better than you"
- children argue over cookies "They're mine!"
- "You can't catch me !"

2) SHARING (SH) - this denotes a positive relationship between children and/or adults. These interactions include the sharing of an object or animal. There must be some level of a character giving something up. If a doll offers to share without giving anything up code it under affiliation.

Ex: - child offers the bike or horse to their sibling to ride
- parents hang up picture together in order to share it

3) RIVALRY/JEALOUSY (R/J) - a triadic relationship between children over adult attention, or between children alone.

Ex: - child goes over to father who is holding brother and asks to be picked up while exclaiming "He's my dad too"

4) EXCLUSION (EX) -

1 = Other - character prevents another from joining in an activity or a character gets sent away. (Check if it fits punishment too)

Ex: - parent sending a child to their room
- all but one doll getting to ride on the bike

2 = Self - character excludes self from activity or others, to include isolation and withdrawal from conflict.

Ex: - "Exclusion" child says she doesn't want to go into room with parents as she'll get hurt.

3 = Both 1 and 2

Unless it is clear why the child is going away, do not code. You must have the sense that someone is being sent away, not wanted.

APPENDIX A.2 (cont)

5) AGGRESSION (AG) -

1 = Physical - aggression directed by the subject or characters towards another character, prop, or object. These interactions have a negative quality to them and include hostile, destructive gestures and forms of physical aggression such as an object being thrown at another character with the intent to cause pain. This category does not include angry yelling or physical acts that are intended as punishment or discipline.

Ex: - subject has one doll hit or punch another doll
- one doll pushes another off the horse or bike
- doll hits horse

2 = Verbal - aggressive comments, excluding shaming, blaming, comments.

Ex: - "I hate you"
Including threats without a disciplinary motive.

3 = Both

6) EMPATHY/HELPING (E/H) - a character or the subject either identifies with or demonstrates an understanding of the thoughts or feelings of another. This may be demonstrated by a worried or concerned facial expression or tone of voice, a movement or gesture toward or visually attending to the victim. Also, the character or subject seeking reassurance from the victim, mother or examiner, attempts to divert the victims attention, sharing something with the victim, or helping the victim by performing an act to relieve distress.

Helping behaviours would include one doll helping another to perform a task or providing assistance so that a job gets done correctly or faster. This does not include one doll doing an act independently for another such as Mom cleaning up the juice or the subject cleaning up the room.

1 = empathy/psychic - as in the first type of empathy described above
Ex: - one doll talking about the injured party to another doll, describing the owie or the hurt
- one doll offers a toy to the injured party
- subject saying "I hurt my knee once too"
- In Mom' Headache Story "No, because my mom's got a headache" Just saying "No, we can't" is not enough.

2 = helping behaviour - as in the second type described above
Ex:- mom doll assisting child doll in wiping up the juice

3 = both

APPENDIX A.2 (cont)

7) REFUSED EMPATHY/HELPING (REH) - one character approaches another for empathy/helping and it is actively denied. Must be quite explicit.

Ex: - child asks mom to help find Barney and mom says "No"

8) INTERPERSONAL CONFLICT RESOLUTION (ICR) - describes situations in which the subject has set up or identified an interpersonal conflict between the dolls, and uses various means in which to successfully resolve the conflict. This may be through sharing, seeking out a third party to act as a mediator or as the final decision maker. This conflict must be between characters and not an intra psychic conflict. This code must refer to conflicts of needs between characters.

1. = Seeks help in conflict resolution from a 3rd party for self gain, not just to get another doll in trouble or to make self look better (code as tattling).

Ex: - one child wants to ride the other child's bike, the one in possession of the bike does not want to share so the child goes to mother and tells her the problem, mother says they have to take turns, and both children comply.

- If a parent is used by the child in Three's a Crowd code 1

2. = Child uses an "adult" like strategy to resolve conflict

Ex: - Crowd story - children negotiate a time limit between each other so that everyone gets a turn.

- Mum's Headache - watching TV at other child's house

3. = Threats are used to resolve conflict, also include threats to tattle

Ex: - 3's crowd story - "If you don't let my brother play I won't give you the ball"

- "If I can't have it I'll ruin it"

- Biscuit Tin story - "Don't tell or I'll hit you"

Check to see if the threat involves aggression; if so code.

9) TATTLING (TAT) - one doll "tattles" on another in order to get the other in trouble or to make themselves look better. Do not include instances where the motive is self inclusion or gain (ICR-1). (CAUTION -not same as blame). Threatening to tattle is coded under ICR-3.

Ex: - "Mom, I saw him steal the cookie"

10) COMPLIANCE (CP) - refers to situations in which a character yields to the rules or requests of an adult and does what is asked. Child must have demonstrated some understanding of the stem to make compliance meaningful.

APPENDIX A.2 (cont)

Ex: - child wipes up juice upon request from parent
- child cleans up room upon request
- child goes to room upon request
- not turning TV on

11) NON-COMPLIANCE (N/C) - refers to situations in which the character ignores the rule or request and/or does something in opposition to it. The character may also acknowledge and justify breaking a rule before or while they are breaking it. Child must have demonstrated an understanding of the story stem to make non-compliance meaningful.

Ex: - child gets a band-aid from bathroom shelf while saying "I know we're not supposed to but Johnny's hurt"
- child plays with special present before cleaning room

- in Biscuit Tin do not code eating biscuit as non-compliance

12) ESCALATION OF CONFLICT (E/C) - indicate incidences of a character escalating the level of aggression beyond that evident in either characters first expression of aggression. Also include acts of retaliation which may reflect the same level of aggression that was initially inflicted upon them. These may also be coded under the aggression category. Do not include in this category situations that involve discipline or punishment in which Mom may go from talking sternly to spanking. Look for when you have both verbal and/then physical aggression. Also include references escalating to suggestions of divorce.

Ex: - Mom yells at child, child hits mom.
- child that gets knocked off horse hits the aggressor back
- Lost Keys - child continues argument and then character becomes aggressive
- also can be verbal conflict, ex. An argument escalating and divorce suggested

13) SHAME (SM)- character exhibits signs of embarrassment or may make self-reproaching types of statements, or when one character shames another. This usually involves angry vocs - with a harsh shaming tone. Also, check to see if punishment/discipline should be coded too.

1. - Shame self - child says "I'm so stupid, I can't do anything right" after being scolded for spilling juice
- child hides when he knows Mom is going to catch him playing with toys instead of taking a nap

2. - Shame other - one character shaming another "Shame on you, you are bad" or "You are a naughty girl"
- "Look what you've done !"

APPENDIX A.2 (cont)

- "You shouldn't have done that !"
- child laughs when s/he see parents kiss Note this one under comments only

14) AFFILIATION (AFL) - refers to situations in which all the dolls are participating in an activity together. This code made be used for 2 or more dolls if there is a clear sense of affiliation or inclusion. There is a sense of inclusion or belonging.

Ex: - everyone gets a turn on the bike
- everyone goes to the park
- In Three's a Crowd only if friend says "Let's all play "

15) BLAME (BLM) - there are two categories of blame:

1. = Blame self - a doll blames self for act committed by others, may be viewed as an effort towards conflict reduction ie. Keys - child doll says "I lost the keys"

2. = Blame other - one doll blames another for an act that they may or may not have committed

Must be in a direct way. Ex - "You did it !"
This includes accusatory comments
Ex: - "What did you do with those keys?" (In a harsh voice)

3. = Both

(Caution - not same as tattling "She did it !" is tattling.)

16) AFFECTION (AFC) - any display of hugs, kisses, compliments, warm or caring touch, or praise.

Ex: - Mom telling child they did a good job
- "Thank you"
- "Good girl"

17) TEASING/TAUNTING (T/T) - one character teasing another with an object that they desire. Taunting often is in the form of a defensive comment.

Ex: - one child says to another "Mom gave me a cookie and you didn't get one"
- "I don't care if I can't have it, I didn't want it anyway"

APPENDIX A.2 (cont)

18) DISHONESTY (DSH) - a character lies, steals or sneaks as part of the narrative.

Ex: - doll hides cookie behind back and tells mom "I don't have anything"
- tiptoes to get bandaid off bathroom shelf
- cheating
- plotting to keep transgressions from parents (but not good things like surprises)

19) PUNISHMENT/DISCIPLINE (P/D) - The following forms of discipline/punishment may be stated or enacted. P/D vocs don't have to be harsh. Include threats of P/D, or instances in which one child doll tell another that they are going to tell a parent so that the parent will disciple them. This is from parent to child only. More of a limit setting. You can score both punishment/discipline and aggression.

1 = Verbal - punishment or discipline (or threat of) with no physical element
Ex: - time out, scolding, exclusion, deprivation, increased demands, rules or policies

2 = Physical - punishment or discipline (or threat of) with a physical element. The subject or character inflicts pain or discomfort on another character which may take the form of spanking. This may be used for parents disciplining children, parents disciplining parents, children disciplining each other or the parents.

3 = Both

4 = Unspecified - child indicates that P/D takes place but they don't specify the form it takes.

Ex: - "He gets in trouble"
- "Mom puts him in his room" (no vocs)
- "Stealing"
- "Mom takes him home" along with some indication that he's in trouble

20) REPARATION/GUILT (R/G) - the act or process of a character making amends or displaying guilt feelings following some disharmony between the child and/ or adult characters. This may be verbal or non-verbal. Also include in this category instances of the subject or a doll making things right again.

1 = reparation/practical
Ex: - fixing or righting the wrong
- finding keys
- puts candy back
- anyone cleaning up the juice or gravy

APPENDIX A.2 (cont)

2 = reparation/guilt

Ex. - mom saying she's sorry and she's not mad anymore to the child
- "I'm sorry"
- someone says they feel sorry or naughty not sad

21) VERBAL CONFLICT (VC) - includes highly inflected angry verbal remarks such as name calling or yelling between children and/or the adult characters.

Ex: - child yells back at mom "I'm not going to clean my room"
- continuing the argument in Lost Keys is VC

22) PERSONAL INJURY (PI) - pertains to any instance of a character being physically hurt or injured. This may be a self inflicted injury, the result of an accident that was caused by another character, the child or a prop. The focus needs to be on the injury or the pain, not just on the act of aggression itself. Subject may present the story stem injury in another character.

Ex: - child screams when falling off the rock (Falling off the rock or falling down by itself is not enough)
- child describes the injury
- going to hospital with injury described
- not illness

23) ATYPICAL RESPONSES (AR) - Write a brief description of these on the line designated AR. (Make special note of death and killing responses under comments)

1 = Neutral or Positive - atypical responses that are not concerning or alarming

Ex: - dad puts his head in his cup

2 = Negative - any atypical or disorganized responses that leave the examiner with a sense of bewilderment or concern that has a negative tone to it.

Ex: - "the house catches on fire and everyone dies"
- crocodiles

3 = Both 1 and 2 in same narrative.

24) REPETITION (REP) -

1 = Same story - whenever the subject repeats the story line and or actions just presented by the examiner. This repetition may be exactly the same or it may be the same actions with a different character. The subject does not add to or subtract from the original story. Do not include instances where the child just continues the parents argument as in "Keys" because this is a natural continuation of events.

APPENDIX A.2 (cont)

2 = Prior story - a recurring theme such as the birthday party happening at the end of the "Lost Barney" story. This is an intrusion of a theme that doesn't fit.

3 = Both 1 and 2

Must get sense that the child is running out of things t say or is stalling, etc. If the child uses repetition in a meaningful way, don't code.

CODING OF PARENTAL REPRESENTATIONS IN NARRATIVES

David Oppenheim, Sun Park, JoAnn Robinson,
Linda Mantz-Simmons, Jenny MacFie

II. These are parent to child only, not parent to parent. When coding parental representations look for moments in which parent is described as doing or saying something in the past, present or future. Also, notice when subject talks about the parents even if their actions are not described, or when the subject describes the child-protagonist's expectations of the parent. Do not code references of the child to his or her actual parents. Several codes can be given for each narrative. However, even if the same code repeats itself it is given only once. This strategy avoids getting into problems related to deciding on the boundaries of themes.

Code as follows:

1 = Mother involved only

2 = Father involved only

3 = Both parents involved (If the child says 'they' code 3)

1) POSITIVE (POS):

A) Protective: Parent is described as protecting the child from possible or actual harm.

Ex: - "Be careful with the scissors"
- include saving
- include protective of child's character

B) Caretaking: Parent is described as engaging in caretaking actions, involving feeding or taking care of child's hurt.

Ex: - parents put bandaid on finger, parent feeds the family

APPENDIX A.2 (cont)

- might be emphasis on feeding ; it is enough to say that mum cooked dinner
- parent takes child to hospital

C) Affectionate, warm, caring, supportive and affirming: a broad category for a range of positive descriptions: Hugging, kissing, complementing child.

Ex: - "she likes to be with her Mom and Dad"
- "give Mom and Dad a kiss"
- Picture- emphasis on the child's' efforts or abilities.

D) Helpful: Parent is giving child concrete help or child seeks help from the parent.

Ex: - parent helps child find lost dog
- child approaches parent to get help

Note : if help is sought and refused code rejecting

2) NEGATIVE (NEG):

A) Harsh, punitive - typically involves aggression or exaggerations of discipline to involve killing, severe beatings.

Ex: - "I'm going to kick you"
- Mother throws pot at child
- blaming (along with demeaning the child ex "stupid girl")
- sexualized affection

B) Rejecting - parent pushes child away, rejects a bid for closeness or help.

Ex: - "That's an ugly picture"

Note : if help is sought and refused code rejecting

C) Ineffectual - parent is unable or unwilling to help or assist the child when the child ask a question or ask for help.

3) DISCIPLINE/CONTROL (D/C):

A) **Discipline** - involves a description of the parent as an authority figure who disciplines and controls the child, child to parent, or may be parent to parent or child to child. May involve physical punishment as long as it is not overly harsh.

Ex: - "I told you NO!", "Don't do that."

APPENDIX A.2 (cont)

III. PERFORMANCE

A) CONTROL (CTR) - indicates attempts by the child to either control the situation or the examiner. This may be through directive statements, attempts to distract the examiner, or contradicting the examiner. Watch out for the examiner saying "But in our story..." Do not include changing the constraints of the story unless these are attempts to manipulate. See also: Denial.

Ex: - child says "No, his name is Harry"
- child continuing to reference a previous story while refusing to relinquish control of a doll or prop

Code as follows after each phase of the narratives:
0 = No controlling statements or acts noted

1 = One or more controlling acts or statements noted
Child must persevere to some extent.

B) EMOTIONAL OPENNESS - the following are over all ratings with the majority being coded during the presentation, narrative development, and transition phases. Coding schemes will vary.

1) PERSONAL EXPRESSIVITY - refers to verbal, non-verbal and physical responses made by the child. Hint: to judge watch how the child's expression is when nothing much id happening.

a) EXPRESSION OF JOY (JOY) - verbal and/or non-verbal acts on the part of the subject that depict some level of joy or pleasure. Score highest level observed at the end of each narrative phase.

0 = Neutral or bland expression; absence of affect; or no positive is evident. Maybe attentive to toys or person but no positive is evident.

1 = Partial or fleeting smile - without eye involvement; or excitement in body movements without accompanying warm smiles or positive vocalizations; straight mouth positive interest or attentiveness (to people or toys) which may include neutral vocalizations. Also include one instance of the child using a word depicting pleasure such "glad" or "happy". Two or more words are coding as a 2).

2 = Smile - Warm, full smile sustained upturned corners for at least ½ second accompanied by eye involvement and/or pleasant vocalizations without body excitement or noticeably high arousal. Two or more words indicating pleasure.

3 = Laughter - Vigorous smiles with laughter and/or other high pleasurable vocalizations which may be accompanied by body tension. (ie.. pleasure screeches, full or tenuous laughter). Full cheek and/or tiny chuckle.

APPENDIX A.2 (cont)

b) ANGER (ANG) - Score highest level observed

0 = No Anger.

1 = Slight/Some Anger - the subject's brow is drawn down at centre; mouth is tight and taut; sustained briefly (2 - 5 secs); may emit a staccato vocalization as in protest. Slight/some anger is portrayed by enacting a single instance of "bossy" tone of voice or single staccato voc (e.g.," NO!"), or subject may state that the doll is angry.

2 = Moderate Anger - the subject's display is the same as 1) but is sustained longer and may include several staccato vocs; the subject may repeat brief displays several times during the coding phase. Moderate anger is portrayed by two or three instances of anger vocalizations (e.g., "Go to bed now! No, I won't!")

3 = Strong Anger - the subject's display is more intense than 2); may include elongated rather than staccato vocs and may involve crying; this is differentiated from full-blow distress cry by: a) state preceding cry is anger than fear/grimace/whimper. Strong anger is portrayed by the characters having repeated instances of anger vocalizations that may spill over into aggression. If aggression is portrayed, strong anger should be scored only if it is preceded by two or three instances of anger vocs.

c) DISTRESS (DIS) - Score highest level observed. Do not score knitted brow affects here unless accompanied by specific criteria below. This category includes FEAR.

0 = No personal distress or portrayed distress observed.

1 = Slight distress or fear - child's eyes enlarge; brow raises, mouth opens slightly; sustained for at least 2 seconds. Child may whine when describing source of distress. Fear is portrayed by enacting a single instance of withdrawal of a character or statement of fear ("I'm scared" or "I don't want to be alone!" or a "Whoah" as the character is falling.)

2 = Whimper - child's negative vocalizations are briefly sustained (2 - 5 secs), face is showing extended grimace with brows drawn down and flattened; often seen as a transition before full- blown crying, which is never reached. This level should be scored for portrayed distress when characters emit cry vocalization once or twice. Subject may simply verbalize that the doll is crying without the accompanying affect.

3 = Full-blown cry - child's negative vocalizations are extended and intense; brows drawn down and flattened; mouth open; child's distress commands response. This level should also be scored for portrayed distress when character(s) emit several cry vocalizations or the distress of a character becomes a salient theme, or when the subject cries/weeps.

d) CONCERN (CRN) - Score highest level observed at the end of each narrative phase. This may be distinguished from a look of concentration by noting it's timing in relation to a concerning event. This category is used when the character or subject

APPENDIX A.2 (cont)

is expressing or demonstrating concern for another person.

0 = No concern - the subject displays pleasure, distress/fear, anger or neutral affects. No knitting brow. No sympathy/concern portrayed in subject's narrative story.

1 = Slight/some concern - the subject sobers (facial display changes from another affective display to mouth turned slightly down, gaze intense or focused downward, not necessarily showing brow knitted) for an extended time (2 - 20 secs) or displays knitted brow expression of moderate concern for a relatively brief time (1 - 5 secs). Subject portrays or verbalizes a single instance of concern for a character (having a doll express sympathy or caring, e.g., "Aww, she fell down." "Uh oh" Also include child referencing the examiner in a concerned manner during the concerning portion of the story.

2 = Moderate concern - the subject sobers and incorporates knitted brow for an extended period of time (5 - 20 secs); the child may display knitted brow for several brief periods, alternating with neutral or other affective display. Moderate portrayed concern is seen including several instances remarking concern for a character; an extended theme of concern is discernible in the subject's response rather than a single remark.

3 = Great concern - the subject displays the full sympathy face of mouth turned down, eyebrows drawn in and raised slightly a centre for a minimum of 3 seconds. If less, score as moderate concern. Great portrayed concern is seen in the subject's focusing on concern for a character as the main (perhaps only) theme in their narrative response. The subject must include several concern remarks and display extended involvement with the caring/sympathy toward one of the characters.

e) SAD (SAD) - any vocalization of sadness and/or the child exhibiting a facial expression with their brow drawn in and up.

Ex: - children stating they are sad because mom and dad are leaving

Code as follows for each narrative phase:

0 = No sadness shown or mentioned.

1 = Uses a word connoting sadness (e.g., "sad" "not happy" "bad") or displays sadness.

- "He feels bad"
- "He's lonely"

2 - More intense than 1. Prolonged expression of sadness (i.e., greater than 5 seconds). Uses a word connoting sadness more than once.

- disappointment with a sigh
- "He's very sad"

APPENDIX A.2 (cont)

f) ANXIETY BEHAVIOUR (ANX) - physical movements on the part of the child which indicates a sense of apprehension or dread. This includes self-soothing behaviours such as rocking or thumb sucking, fidgeting, chewing on either their lip or an object. These may be sporadic or continuous behaviours.

Ex: - subject chews on dolls head while examiner is talking
- subject asking what is going to happen next
- hand rubbing face
- repetitive body motion
- self-soothing behaviour
- pulling or twisting hair
- sucking or chewing on lip
- regressive or nervous speech

Code as follows for each narrative phase:

0 = No anxiety behaviours noted

1 = One or more anxiety behaviours noted

g) DENIAL (DNL) - the child may deny the conflict or story by ignoring it or they may deny a part of the story that the examiner has presented. The subject must demonstrate an understanding of the conflict in order to be actively denying it.

Ex: - child tells examiner "He didn't hurt his knee" in the bicycle story

Code as follows for each of the narrative phases:

0 = No denial, the child deals with the story as presented

1 = Child initially resists dealing with the a horn or issue but then addresses it (perhaps after prompting)

2 = Child denies a horn of the story throughout narrative
Ex. Mummy's headache goes away

C) ROLE OF PARENTS (RP) - Indicate which parent the subject utilized during the narrative phase for acts such as consoling, helping, participating in the action, or administrator or recipient of punishment or aggression.

Code as follows under the over-all category once the transition phase is complete:

0 = No parent present or at least one parent present but not utilized.
1 = Mom is utilized, dad, if present, is not utilized. Code this when the examiner has brought mom back into the story and the child character converses with the mom doll.

APPENDIX A.2 (cont)

2 = Dad is utilized, mom if present, is not utilized.

3 = Parents are utilized.

Code any of the above if the parents are just mentioned.

D) NARRATIVE COHERENCE (NC) - for four and five year olds

0 = No response or "I don't know what happens". Child may repeat a portion or all of the story stem without any additions.

1 = Not coherent - fragmented shifts in story line. Child does not return to original story stem.

2 = Child stays within story line but does not address the conflict and/or story.

3 = Child exhibits an understanding of the conflict but does not offer any resolution when a resolution is expected or does not offer an ending to the story. A portion of the narrative may be incoherent.

Examiner might end up asking, 'So, what happened ?'
Ex., in Lost keys the keys are never found

4 = Child handles the conflict by changing the constraints presented in the original stem or prompt. Narrative may include incoherent shifts. More contradicting the story stem.

Ex., Mom says it is okay to have cookies.
The keys were never lost.

5 = Child demonstrates an understanding of the conflict or story and handles it indirectly by offering an easier solution. More avoiding the conflict.

Ex., In lost keys child says, 'I lost the keys.'
In Crowd story child walks away without his/her ball.

6 = Child demonstrates an understanding of the conflict or story and/or offers a resolution without any story embellishment. Typically these stories are very short. Child offers the minimal amount to tell the story. A segment of the story is incoherent.

7 = The same as 6 with NO incoherence.

8 = Child demonstrates an understanding of the conflict or story and offers a resolution with some story embellishment. A segment of the story is incoherent.

9 = The same as 8 with NO incoherence.

APPENDIX A.2 (cont)

10 = A very coherent, logical, sequential series of events that are related to the story stem. Child may add to the story but does not change the original story stem. An understanding of the conflict and a resolution to the conflict are presented, or an understanding of the story and an ending to the story are provided when there is no conflict. There are no incoherent shifts in the story and there is a lot of embellishment.

E) DIRECT VS. INDIRECT PERFORMANCE STYLE (DI) - refers to the degree of interpretation necessary on the part of the listener in order to understand the message being conveyed. For example, a direct performance style would be the child telling the examiner "No, I'm not going to finish the story", while an indirect style would be the child looking down and shaking their head in response to the examiner's requests. This scale may discriminate between the levels of inhibition across children. We are trying to determine the clarity of meaning here. Also, inhibition of action/play is what we are trying to get at here but not of speech.

Ex: - child moves dolls but does not say anything
Code during the narrative development phase as follows:
0 = No response or there may be several things going on that are incoherent to the examiner

1 = Indirect (principally), when prompted child either provides no response or half a direct response (ie., nods head). You find yourself filling in the gaps of the story

2 = Direct (principally), may be prompted by examiner. Very little if any interpretation is necessary on the part of the examiner. It is very clear what the child is doing.

F) RELATIONSHIP WITH EXAMINER - refers to the level of interaction the child initiates and/or maintains with the examiner throughout all phases. This would include the child initiating a dialogue, answering questions, attending while examiner is talking, visually referencing the examiner, telling the story to examiner, or involving the examiner in play. This may occur outside of the narrative frame.

1) CHILD'S RESPONSIVITY WITH EXAMINER (RES) - this scale assess the degree of enjoyment and eagerness the child displays in response to the examiner's prompts to respond to the narrative story stems. Highest rating is a 7. Intermediate scale points should be used as well as anchor points described below. If all cues in the category are not present then back up one point. Utilize a holistic approach when coding in this category.

Code as follows under the over-all category:

1 = Child does not respond to examiner's prompts; no pleasure is seen and there are frequent negative (anger or distress) outbursts; subject's gaze is averted away from examiner and materials (eg., gazing downward).

APPENDIX A.2 (cont)

If subject refuses to respond but does not display negative affects (ie., mute refusal), score 2.

3 = Subject reluctantly responds to coaxing by examiner; no pleasure is seen, primarily neutral or infrequent negative (anger or distress) affective displays toward the examiner; gaze is averted to materials and is never directed to examiner's face.

5 = Subject responds to examiner when prompted; occasionally smiles, but affect is primarily neutral; no negative affects directed towards the examiner; subject may look to examiner's face once or twice during entire narrative; subject may hesitate but does not refuse to respond.

7 = Subject is ready to respond before the examiner invites response and displays frequent smiles and possibly occasional laughter; subject clearly enjoys the give and take and never hesitates to respond; may include frequent visual gaze toward examiner's face.

2) CHILD'S INVOLVEMENT OF EXAMINER (IE) - this scale assesses the degree to which the child initiates or sustains interaction with the examiner. The child may ask questions of the examiner or may request her to assist or participate in their narrative response. This may occur outside of the narrative frame. Consider the child's 'neediness' level.

Code as follows in the overall column:

1 = Subject does not invite or involve the examiner in any way during the narrative.

3 = Subject may invite or request assistance or more information from the examiner once during the narrative; child may elaborate moderately; may offer toy or may look at the examiner several times. Subject may initiate a conversation.

5 = Subject invites examiner to play a role or requests examiner's assistance repeatedly during the narrative; child may elaborate extensively in response to examiner's prompt and may end with a request for involvement. May also include the child initiating negotiations with the examiner.

G) INVESTMENT IN PERFORMANCE (IP) - indicate under the Over-all column the level of personal involvement the subject demonstrates through-out the 3 phases by recording the total number of investments noted. For example if the subject moves one or more dolls through one or more motions that contributes to the story in any way this would equal one investment in performance. If the subject attempts to leave and has demonstrated some investment in performance code a -1 over the number of investments noted, ie., -1/3. Examples of investment in performance are as follows: (remaining within the narrative)

- picking up the doll(s) performing no other actions
- moving props in a manner that contributes to the story (ie. not just picking up

APPENDIX A.2 (cont)

a prop and putting it down again)
- dramatisation such as the subject moving the dolls through various motions

- narration, the subject telling the examiner what is happening
- talking in different voices for the dolls
- adding sound effects
- the subject becoming an actor in the story
- interjection of the child's own related personal experiences
- whispering
- singing within the narrative frame
- also sound effects

Count the number of investment examples and code as follows in the over-all column:

-1 = Subject attempts to leave testing area (not to do something purposeful like go to the bathroom).

0 = No investment in performance noted, subject does not attempt to leave

1, 2, 3,.... = Indicate total number of investment noted

I) INDICATORS OF THE CHILD UNDERSTANDING THE CONFLICT (CUC) - Note that stories vary on whether they have one or two "horns" of a dilemma which is presented to the child. For each horn of a 2 horned dilemma, one horn is the "Presenting Problem" and one horn is the "Constraint." The Presenting Problem is the quandary to which the child is trying to find a solution. The Constraint is what makes it difficult to find a solution to the Presenting Problem. Under the descriptions below, the Presenting Problem is indicated by (PP). Evidence is defined as verbalization or enactment that clearly indicates the child knows one horn of the dilemma.

For 2 horned dilemmas:

0 = No Evidence of either horn

1 = Minimal Evidence is demonstrated if the subject understands the Presenting Problem only.

2 = Complex Evidence is scored if the subject demonstrates evidence for understanding both horns of the dilemma at some point in the narrative, but it is not indicated simultaneously (eg., in the NAP story, Dick/Jane first gets into bed, and when asked about the toys, she plays with the toys).

For 1 horned dilemmas:

0 = No Evidence of dilemma

APPENDIX A.2 (cont)

1 = Complete Evidence is demonstrated if the subject demonstrates evidence for the one horn of the dilemma. One exception to this definition is the Cooking Story, which has 2 (mostly) orthogonal dilemmas embedded in it: the child is burned, and a mess is made. The child's burn is considered the Presenting Problem, and if this is addressed, the subject shows Complete Evidence of representation of the dilemma. For the purposes of this scale, we will treat the Cooking Story as if it is a one horned dilemma.

Descriptions of the one (or two) horns of the dilemma for each of the narratives. (PP) indicates the Presenting Problem in the dilemmas.

SPILLED JUICE:

1. Child understands the juice needs to be cleaned up.

MOTHER'S HEADACHE

1. Child understands mother has a headache.

THREE'S A CROWD:

1. (PP). Child indicates that s/he understands that little sib wants to play.
2. Child indicates that s/he understands that peer refuses to have the younger sib play.

BURNED HAND:

1. Child understands the burn needs attention. (Conflict does not include the spilled gravy)

LOST KEYS:

1. Child understands keys are lost, or need to be found, or finds them.

SWEET SHOP:

1. Child understands it was wrong to take chocolate/sweets.

SEPARATION:

1. Child acknowledges or accepts the parents have gone without them. Eg., Says or waves good-bye.

REUNION:

1. Child acknowledges or accepts that the parents have returned. Eg., Says hello; greets parents in some way.

BATHROOM SHELF:

1. (PP). Child understands plaster is needed by sibling.
2. Child understands prohibition against getting the plaster, or says the plasters are on the shelf.

APPENDIX A.2 (cont)

EXCLUSION:

1. Child understands parents want to be alone and the child must remain in another room.

BISCUIT TIN:

1. Child understands that the biscuits are forbidden.

APPENDIX A.3

Child No._____ Rater_____

	SJ	MH	3C	BH	LK	SS	SN	RN	BS	EX	BT
NO THEMES											
COMPETITION											
SHARING											
RIVALRY											
EXCLUSION											
AGGRESSION											
EMPATHY											
REFUSED E/H											
I-C RESOLVE											
TATTLING											
COMPLIANCE											
NON-COMPLY											
ESCALATION											
SHAME											
AFFILIATION											
BLAME											
AFFECTION											
TEASING											
DISHONESTY											
PUNISHMENT											
REPARATION											
VERBAL CONF.											
INJURY											
ATYPICAL											
REPETITION											

PARENTAL REPRESENTATIONS											
	SJ	MH	3C	BH	LK	SS	SN	RN	BS	EX	BT
POSITIVE											
NEGATIVE											
DISCIPLINING											

APPENDIX A.3 (CONT)

ID		PRE						
STORY		NAR						
RATER		TRA						

RP	NC	DNL	ADR	D/I	RES	IE	IP	CUC			

ID		PRE						
STORY		NAR						
RATER		TRA						

RP	NC	DNL	ADR	D/I	RES	IE	IP	CUC			

ID		PRE						
STORY		NAR						
RATER		TRA						

RP	NC	DNL	ADR	D/I	RES	IE	IP	CUC			

ID		PRE						
STORY		NAR						
RATER		TRA						

RP	NC	DNL	ADR	D/I	RES	IE	IP	CUC			

APPENDIX A.3 (CONT)

		CTR	JOY	ANG	DIS	CRN	SAD	ANX
ID	PRE							
STORY	NAR							
RATER	TRA							

RP	NC	DNL	ADR	D/I	RES	IE	IP	CUC			

		CTR	JOY	ANG	DIS	CRN	SAD	ANX
ID	PRE							
STORY	NAR							
RATER	TRA							

RP	NC	DNL	ADR	D/I	RES	IE	IP	CUC			

		CTR	JOY	ANG	DIS	CRN	SAD	ANX
ID	PRE							
STORY	NAR							
RATER	TRA							

RP	NC	DNL	ADR	D/I	RES	IE	IP	CUC			

		CTR	JOY	ANG	DIS	CRN	SAD	ANX
ID	PRE							
STORY	NAR							
RATER	TRA							

RP	NC	DNL	ADR	D/I	RES	IE	IP	CUC			

APPENDIX A.3 (CONT)

		CTR	JOY	ANG	DIS	CRN	SAD	ANX
ID	PRE							
STORY	NAR							
RATER	TRA							

RP	NC	DNL	ADR	D/I	RES	IE	IP	CUC			

		CTR	JOY	ANG	DIS	CRN	SAD	ANX
ID	PRE							
STORY	NAR							
RATER	TRA							

RP	NC	DNL	ADR	D/I	RES	IE	IP	CUC			

		CTR	JOY	ANG	DIS	CRN	SAD	ANX
ID	PRE							
STORY	NAR							
RATER	TRA							

RP	NC	DNL	ADR	D/I	RES	IE	IP	CUC			

APPENDIX A.4

Frequency of Content and Performance Codes Observed

Table 1 : Frequency of the binary content codes no theme, competition, sharing, rivalry and affiliation in each of the story stems (n = 86).

Story Stem	Competition		Sharing		Rivalry		Affiliation	
	a	p	a	p	a	p	a	p
Spilled Juice	86	0	86	0	86	0	83	3
Mother's Headache	86	0	86	0	86	0	83	3
Three's a Crowd	86	0	85	1	86	0	82	4
Burnt Hand	86	0	86	0	86	0	85	1
Lost Keys	85	1	86	0	86	0	83	3
Sweet Shop	86	0	85	1	86	0	86	0
Separation	84	2	86	0	86	0	84	2
Reunion	86	0	86	0	86	0	77	9
Bathroom Shelf	86	0	85	1	86	0	85	1
Exclusion	86	0	86	0	85	1	84	2
Biscuit Tin	86	0	86	0	86	0	86	0

a = absent p = present

APPENDIX A.4 (CONT)

Table 2 : Frequency of the binary content codes affection, compliance, non- compliance, refused empathy/helping (n=86).

Story Stem	**affection**		**compliance**		**non-compliance**		**refused empathy/helping**	
	a	p	a	p	a	p	a	p
Spilled Juice	82	4	85	1	85	1	86	0
Mother's Headache	83	3	33	53	45	41	86	0
Three's a Crowd	82	4	81	5	86	0	86	0
Burnt Hand	81	5	84	2	80	6	83	3
Lost Keys	71	15	86	0	86	0	86	0
Sweet Shop	77	9	81	5	83	3	85	1
Separation	78	8	85	1	82	4	85	1
Reunion	65	21	86	0	86	0	86	0
Bathroom Shelf	74	12	58	28	32	54	85	1
Exclusion	73	13	58	28	28	58	86	0
Biscuit Tin	81	5	82	4	81	5	86	0

a = absent p = present

Table : Frequency of the binary content codes tattling, escalation of conflict, teasing and dishonesty (n=86).

Story Stem	**Tattling**		**Escalation of conflict**		**Teasing**		**Dishonesty**	
	a	p	a	p	a	p	a	p
Spilled Juice	85	1	85	1	86	0	84	2
Mother's Headache	86	0	85	1	86	0	82	4
Three's a Crowd	85	1	83	3	86	0	83	3
Burnt Hand	86	0	86	0	86	0	81	5
Lost Keys	85	1	79	7	86	0	71	15
Sweet Shop	86	0	84	2	86	0	73	13
Separation	86	0	86	0	85	1	81	5
Reunion	85	1	86	0	86	0	84	2
Bathroom Shelf	78	8	86	0	86	0	71	15
Exclusion	86	0	85	1	85	1	75	11
Biscuit Tin	57	29	86	0	85	1	63	23

APPENDIX A.4 (CONT)

Table 3: Frequency of the binary content codes verbal conflict and personal injury (n=86).

Story Stem	**Verbal conflict**		**Personal injury**	
	a	p	a	p
Spilled Juice	86	0	84	2
Mother's Headache	86	0	86	0
Three's a Crowd	84	2	83	3
Burnt Hand	85	1	75	11
Lost Keys	71	15	85	1
Sweet Shop	83	3	81	5
Separation	86	0	82	4
Reunion	86	0	82	4
Bathroom Shelf	86	0	80	6
Exclusion	84	2	81	5
Biscuit Tin	85	1	84	2

a = absent p = present

Table 4: Frequency of the complex content code exclusion in each story stem (n=86).

Story Stem	**Exclusion absent**	**Exclusion of other**	**Exclusion of self**	**Exclusion of both other and self**
Spilled Juice	66	16	2	2
Mother's Headache	61	9	14	2
Three's a Crowd	36	20	29	1
Burnt Hand	71	12	3	0
Lost Keys	70	9	5	2
Sweet Shop	65	14	6	1
Separation	81	1	3	1
Reunion	81	4	1	0
Bathroom Shelf	76	8	2	0
Exclusion	80	3	3	0
Biscuit Tin	60	22	4	0

APPENDIX A.4 (CONT)

Table 5 : Frequency of complex content code aggression (n=86).

Story Stem	Aggression absent	Physical aggression	Verbal aggression	Both physical and verbal aggression
Spilled Juice	79	7	0	0
Mother's Headache	80	6	0	0
Three's a Crowd	62	19	3	2
Burnt Hand	80	6	0	0
Lost Keys	62	21	2	1
Sweet Shop	72	12	1	1
Separation	77	9	0	0
Reunion	74	10	2	0
Bathroom Shelf	81	5	0	0
Exclusion	74	9	2	1
Biscuit Tin	76	8	1	1

Table 6: Frequency of complex content code empathy and helping (n=86).

Story Stem	Absence of helping/empathy	Empathy	Helping	Both helping and empathy
Spilled Juice	83	0	3	0
Mother's Headache	46	40	0	0
Three's a Crowd	58	28	0	0
Burnt Hand	16	69	0	1
Lost Keys	82	1	2	1
Sweet Shop	86	0	0	0
Separation	82	4	0	0
Reunion	86	0	0	0
Bathroom Shelf	11	74	0	1
Exclusion	85	1	0	0
Biscuit Tin	85	1	0	0

APPENDIX A.4 (CONT)

Table 7: Frequency of the complex content code interpersonal conflict resolution (n=86).

Story stem	Absence of interpersonal conflict resolution	Seeks help	Uses adult strategy	Uses threats
Spilled Juice	86	0	0	0
Mother's Headache	77	0	9	0
Three's a Crowd	57	20	2	7
Burnt Hand	86	0	0	0
Lost Keys	84	0	1	1
Sweet Shop	86	0	0	0
Separation	85	0	0	1
Reunion	86	0	0	0
Bathroom Shelf	82	3	1	0
Exclusion	86	0	0	0
Biscuit Tin	86	0	0	0

Table 8 : Frequency of the complex content code shame (n=86).

Story Stem	Absence of shame	Shames self	Shames other	Shames both self and other
Spilled Juice	71	1	14	0
Mother's Headache	82	1	3	0
Three's a Crowd	78	1	7	0
Burnt Hand	67	0	19	0
Lost Keys	78	0	8	0
Sweet Shop	65	1	20	0
Separation	84	0	2	0
Reunion	85	0	1	0
Bathroom Shelf	72	0	13	1
Exclusion	79	2	5	0
Biscuit Tin	73	1	12	0

APPENDIX A.4 (CONT)

Table 9: Frequency of the complex content code blame (n=86).

Story Stem	Absence of blame	Blames self	Blames other	Blames self and other
Spilled Juice	86	0	0	0
Mother's Headache	85	0	2	0
Three's a Crowd	86	0	0	0
Burnt Hand	80	1	5	0
Lost Keys	73	7	6	0
Sweet Shop	83	1	2	0
Separation	86	0	0	0
Reunion	86	0	0	0
Bathroom Shelf	84	0	2	0
Exclusion	86	0	0	0
Biscuit Tin	83	1	3	0

Table 10: Frequency of the complex content code punishment (n=86).

Story Stem	Absence of punishment	Verbal punishment	Physical punishment	Both verbal and physical punishment
Spilled Juice	43	23	12	8
Mother's Headache	63	16	4	3
Three's a Crowd	77	8	0	1
Burnt Hand	43	40	2	1
Lost Keys	76	6	3	1
Sweet Shop	28	41	10	7
Separation	79	4	1	2
Reunion	79	4	3	0
Bathroom Shelf	54	22	3	7
Exclusion	70	14	0	2
Biscuit Tin	37	33	8	8

APPENDIX A.4 (CONT)

Table 11: Frequency of the complex content code reparation and guilt (n=86).

Story stem	Absence of reparation and guilt	Reparation	Guilt	Both reparation and guilt
Spilled Juice	10	63	3	10
Mother's Headache	86	0	0	0
Three's a Crowd	83	0	2	0
Burnt Hand	71	11	4	0
Lost Keys	33	46	3	4
Sweet Shop	44	38	3	1
Separation	85	0	1	0
Reunion	86	0	0	0
Bathroom Shelf	81	2	3	0
Exclusion	84	1	1	0
Biscuit Tin	75	5	6	0

Table 12: Frequency of the complex content code atypical response (n=86).

Story Stem	Absence of atypical response	Neutral or positive	Negative	Both neutral or positive and negative
Spilled Juice	75	7	4	0
Mother's Headache	84	0	2	0
Three's a Crowd	82	1	3	0
Burnt Hand	73	5	8	0
Lost Keys	70	12	4	0
Sweet Shop	73	4	8	1
Separation	76	6	4	0
Reunion	76	4	6	0
Bathroom Shelf	78	4	4	0
Exclusion	74	7	5	0
Biscuit Tin	78	3	4	1

APPENDIX A.4 (CONT)

Table 13: Frequency of the complex content code repetition (n=86).

Story Stem	Absence of repetition	Repetition of same story	Repetition of prior story	Repetition of both same and prior story
Spilled Juice	78	8	0	0
Mother's Headache	83	2	1	0
Three's a Crowd	85	1	0	0
Burnt Hand	79	5	1	1
Lost Keys	82	2	2	0
Sweet Shop	83	0	3	0
Separation	81	1	4	0
Reunion	86	0	0	0
Bathroom Shelf	80	3	3	0
Exclusion	83	1	2	0
Biscuit Tin	82	2	2	0

Table 14: Frequency of the complex code positive parental representationss (n=86).

Story Stem	Absence of positive parental representation	Positive mother only	Positive father only	Both mother and father
Spilled Juice	82	1	2	1
Mother's Headache	83	3	0	0
Three's a Crowd	75	4	1	6
Burnt Hand	39	31	13	3
Lost Keys	75	7	1	3
Sweet Shop	80	5	1	0
Separation	85	0	0	1
Reunion	64	2	1	19
Bathroom Shelf	55	30	0	1
Exclusion	80	2	2	2
Biscuit Tin	78	5	2	1

APPENDIX A.4 (CONT)

Table 15: Frequency of the complex code negative parental representations (n=86).

Story Stem	**Absence of negative parental representation**	**Negative mother only**	**Negative father only**	**Both mother and father**
Spilled Juice	79	1	2	4
Mother's Headache	83	3	0	0
Three's a Crowd	84	1	0	1
Burnt Hand	76	4	3	3
Lost Keys	77	3	3	3
Sweet Shop	75	10	0	1
Separation	85	0	0	1
Reunion	83	0	1	2
Bathroom Shelf	85	1	0	0
Exclusion	83	1	1	1
Biscuit Tin	83	1	2	0

Table 16: Frequency of the complex code disciplining parental representations (n=86).

Story Stem	**Absence of disciplining parental representation**	**Disciplining mother only**	**Disciplining father only**	**Both mother and father**
Spilled Juice	44	12	9	21
Mother's Headache	60	26	0	0
Three's a Crowd	72	6	2	6
Burnt Hand	47	31	3	5
Lost Keys	75	5	1	5
Sweet Shop	29	56	1	0
Separation	86	0	0	0
Reunion	79	2	1	4
Bathroom Shelf	54	32	0	0
Exclusion	67	5	7	7
Biscuit Tin	32	22	13	19

APPENDIX A.4 (CONT)

Table 17: Frequency of role of parent in each story stem (n=89).

Story Stem	no parent indicated	mother only indicated	father only indicated	both parents indicated
Spilled Juice	7	13	11	58
Mother's Headache	2	78	0	9
Three's a Crowd	41	12	4	32
Burnt Hand	4	42	4	39
Lost Keys	3	2	6	78
Sweet Shop	4	74	1	10
Separation	56	1	0	32
Reunion	10	3	1	75
Bathroom Shelf	6	78	0	5
Exclusion	13	12	3	61
Biscuit Tin	9	23	6	51

Table 18: Frequency of child's understanding of the conflict in each story stem (n=89).

Story Stem	no understanding	some understanding
Spilled Juice	10	79
Mother's Headache	10	79
Three's a Crowd	25	64
Burnt Hand	6	83
Lost Keys	15	74
Sweet Shop	5	84
Separation	3	86
Reunion	8	81
Bathroom Shelf	11	78
Exclusion	24	65
Biscuit Tin	6	83

APPENDIX A.4 (CONT)

Table 19: Frequency of indirect vs direct performance style in each story stem (n=89).

Story Stem	indirect style	direct style
Spilled Juice	14	75
Mother's Headache	8	81
Three's a Crowd	8	81
Burnt Hand	9	80
Lost Keys	10	79
Sweet Shop	9	80
Separation	9	80
Reunion	8	81
Bathroom Shelf	8	81
Exclusion	12	77
Biscuit Tin	9	80

Table 20: Frequency of types of response to examiner in each story stem (n=89).

Story Stem	no response	reluctant response	ready or enthusiastic response
Spilled Juice	4	21	64
Mother's Headache	3	17	69
Three's a Crowd	3	14	72
Burnt Hand	3	19	67
Lost Keys	3	18	68
Sweet Shop	3	25	61
Separation	3	22	64
Reunion	4	19	66
Bathroom Shelf	3	15	71
Exclusion	3	21	65
Biscuit Tin	4	19	66

APPENDIX A.4 (CONT)

Table 21: Frequency of level of involvement of examiner in each story stem (n=89).

Story Stem	little or no involvement	moderate or more involvement
Spilled Juice	47	42
Mother's Headache	42	47
Three's a Crowd	46	43
Burnt Hand	41	48
Lost Keys	52	37
Sweet Shop	52	37
Separation	47	42
Reunion	60	29
Bathroom Shelf	44	45
Exclusion	47	42
Biscuit Tin	68	21

Table 22: Frequency of number of investments in performance in each story stem (n=89).

Story Stem	three or fewer	four	five	six or seven
Spilled Juice	31	33	17	8
Mother's Headache	24	38	22	5
Three's a Crowd	24	38	23	4
Burnt Hand	28	23	27	11
Lost Keys	34	32	16	7
Sweet Shop	20	25	35	9
Separation	22	30	27	10
Reunion	21	35	26	7
Bathroom Shelf	15	30	32	12
Exclusion	16	32	39	2
Biscuit Tin	28	23	31	7

APPENDIX A.4 (CONT)

Table 23: Frequency of denial in each story stem (n=89).

Story Stem	no denial	some denial
Spilled Juice	59	30
Mother's Headache	64	25
Three's a Crowd	56	33
Burnt Hand	51	38
Lost Keys	47	42
Sweet Shop	73	16
Separation	77	12
Reunion	77	12
Bathroom Shelf	68	21
Exclusion	54	35
Biscuit Tin	78	11

Table 24: Frequency of adaptiveness of response in each story stem (n=89).

Story Stem	low level of adaptiveness	moderate level of adaptiveness	high level of adaptiveness
Spilled Juice	26	53	10
Mother's Headache	29	46	14
Three's a Crowd	33	49	7
Burnt Hand	36	41	12
Lost Keys	50	36	3
Sweet Shop	39	43	7
Separation	33	46	10
Reunion	41	31	17
Bathroom Shelf	23	50	16
Exclusion	53	28	8
Biscuit Tin	36	45	8

APPENDIX A.4 (CONT)

Table 25: Frequency of narrative coherence in each story stem (n=89).

Story Stem	conflict not addressed	conflict partially addressed	conflict addressed some resolution	conflict addressed and resolved
Spilled Juice	16	0	52	21
Mother's Headache	12	23	32	22
Three's a Crowd	10	37	20	22
Burnt Hand	17	4	36	32
Lost Keys	28	25	19	17
Sweet Shop	17	11	38	23
Separation	21	0	23	45
Reunion	23	3	45	18
Bathroom Shelf	14	13	25	37
Exclusion	39	18	18	14
Biscuit Tin	17	10	39	23

Table 26: Frequency of control, joy and anger in each phase each story stem (n=89).

Story Stem	Control			Joy			Anger		
	p	n	t	p	n	t	p	n	t
Spilled Juice	2	9	3	50	66	26	1	20	0
Mother's Headache	15	6	7	56	68	24	0	14	0
Three's a Crowd	8	9	8	46	66	21	0	14	0
Burnt Hand	13	12	12	51	63	27	1	11	0
Lost Keys	6	14	11	42	71	26	3	18	0
Sweet Shop	10	8	8	47	62	28	0	27	0
Separation	16	17	5	46	67	2	1	5	0
Reunion	8	11	11	31	62	28	0	4	0
Bathroom Shelf	12	10	12	40	66	36	0	20	0
Exclusion	14	13	14	50	66	33	1	8	1
Biscuit Tin	7	7	5	41	65	19	1	16	0

p = presentation phase n = narrative phase t = transition phase

APPENDIX A.4 (CONT)

Table 27: Frequency of distress, concern, sadness and anxiety in each phase of the story stem (n=89).

Story Stem	Distress			Concern			Sadness			Anxiety		
	p	n	t	p	n	t	p	n	t	p	n	t
Spilled Juice	0	7	0	7	3	0	1	3	0	44	69	45
Mother's Headache	0	4	1	7	2	1	0	3	0	63	67	44
Three's a Crowd	1	8	0	12	0	2	0	10	1	55	66	45
Burnt Hand	1	7	0	20	2	1	0	2	1	61	62	50
Lost Keys	0	6	0	10	0	0	0	2	0	59	68	46
Sweet Shop	0	7	0	7	2	0	0	3	0	57	60	49
Separation	2	9	0	0	0	0	0	4	0	60	58	9
Reunion	1	3	0	0	1	0	0	1	0	33	52	38
Bathroom Shelf	0	5	1	29	3	1	0	1	0	62	63	50
Exclusion	1	4	0	4	2	1	0	1	0	66	64	49
Biscuit Tin	0	4	0	12	1	0	0	2	0	55	54	23

p = presentation phase n = narrative phase t = transition phase

APPENDIX A.5

Repeated measures t-test to see if the means between the stories for the same factor are different from each other

Table T-values for Factor 1 (storytelling/relationship to task) between the 11 stories (n=89).

	F1 SJ	F1 MH	F1 3C	F1 BH	F1 LK	F1 SS	F1 SN	F1 RN	F1 BS	F1 EX
F1 SJ										
F1 MH	5.49***									
F1 3C	1.60	-3.43**								
F1 BH	1.07	-3.80***	-0.43							
F1 LK	0.52	-4.97***	-1.09	-0.65						
F1 SS	5.48***	0.18	3.20*	4.38***	5.87***					
F1 SN	3.81***	-0.43	2.26	2.86**	3.76***	-0.66				
F1 RN	-0.18	-4.54***	-1.41	-1.24	-0.73	-5.30***	-4.75***			
F1 BS	0.49	-4.90***	-1.00	-0.76	-0.06	-5.64***	-5.02***	0.82		
F1 EX	3.57**	0.71	-1.86	-2.65*	-3.17**	0.95	0.34	-4.50***	-4.30***	
F1 BT	1.06	3.23*	0.35	-0.06	-0.68	3.96***	3.37**	-1.54	-0.92	-2.96*

* <.01 **<.001 *** <.000

Table T-values for Factor 2 (discipline and punishment) of 11 stories (n=86).

	F2 SJ	F2 MH	F2 3C	F2 BH	F2 LK	F2 SS	F2 SN	F2 RN	F2 BS	F2 EX
F2 SJ										
F2 MH	4.71***									
F2 3C	4.82***	0.63								
F2 BH	1.32	-3.20**	-3.46**							
F2 LK	5.54***	1.37	0.89	4.51***						
F2 SS	-.57	-5.76***	-6.37***	-2.36*	-6.48***					
F2 SN	8.00***	4.73***	4.16***	7.32***	3.12*	10.20***				
F2 RN	7.40***	3.50**	2.93*	6.20***	1.84	9.08***	-1.52			
F2 BS	2.79**	-1.69	-2.37*	1.40	-2.80*	3.37**	-6.04***	-4.45***		
F2 EX	4.86***	1.01	0.42	4.00***	-0.37	6.54***	-3.26*	-2.12	2.46*	
F2 BT	-.94	-5.78***	-6.47***	-2.46*	-6.75***	-0.40	-10.12***	-8.90***	-3.93***	-6.83*

* <.01 **<.001 *** <.000

Table T-values for Factor 3 (negative/controlling) between the 11 stories (n=89).

	F3 SJ	F3 MH	F3 3C	F3 BH	F3 LK	F3 SS	F3 SN	F3 RN	F3 BS	F3 EX
F3 SJ										
F3 MH	-0.10									
F3 3C	-1.46	-1.86								
F3 BH	-2.89*	-2.60*	-0.89							
F3 LK	-1.42	-1.38	0.06	0.98						
F3 SS	-3.55**	-3.76***	-2.08	-1.55	-2.49*					
F3 SN	-2.98*	-3.05*	-1.35	-0.56	-1.41	0.89				
F3 RN	-2.75*	-3.18*	-1.30	-0.52	-1.46	0.90	0.04			
F3 BS	-3.07*	-3.38**	-1.79	-0.86	-2.02	0.57	-0.41	-0.44		
F3 EX	-2.95*	3.16*	1.33	0.44	1.26	-0.98	-0.10	-0.08	-0.50	
F3 BT	-1.97	2.44	0.44	-0.36	0.48	-1.86	-1.08	-1.13	-1.42	0.95

* <.01 **<.001 *** <.000

Table T-values for factor 4 (positive/affection) between the 11 stories (n=86).

	F4 SJ	F4 MH	F4 3C	F4 BH	F4 LK	F4 SS	F4 SN	F4 RN	F4 BS	F4 EX
F4 SJ										
F4 MH	.00									
F4 3C	-1.65	-1.73								
F4 BH	-5.77***	-5.96***	-4.05***							
F4 LK	-3.03*	-3.40**	-1.83	1.86						
F4 SS	-2.18	-1.58	.00	3.94***	1.74					
F4 SN	-0.65	-0.69	1.04	4.74***	2.55*	0.93				
F4 RN	-4.74***	-4.31***	-4.16***	-0.34	-2.09	-3.46**	-4.53***			
F4 BS	-5.60***	-5.60***	-4.49***	-0.47	-2.35	-4.60***	-5.06***	-0.12		
F4 EX	-1.89	2.35	0.49	-3.63***	-1.21	0.48	1.58	-2.78*	-3.23*	
F4 BT	-1.09	1.04	-0.55	-4.25***	-3.13*	-0.62	0.39	-3.80***	-4.41***	0.97

* <.01 **<.001 *** <.000

APPENDIX B.1

Mill Hill Vocabulary Scale

A SHORT VOCABULARY SCALE

for Clinical Use with Individual Patients

Prepared by J.C. Raven

(Each word correctly explained is equivalent to a score of 5 on the whole M.H.V. Scale)

Name ..... Date .....

Age ..... Sex .....

Other Assessments .....

% of British Adults finding definitions difficult		
	Cruel	
	Near	
	Shrivel	
	View	
5	Liberty	
10	Mingle	
	Elevate	
25	Verify	

APPENDIX B.1 (CONT)

% of British Adults finding definitions difficult

	Bombastic
50	Virile
	Perpetrate
75	Construe
	Temerity
90	Criterion
95	Specious
	Recondite
	Adumbrate

Notes:

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APPENDIX B.2

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INFANT QUESTIONNAIRE

Part I.

Your name _____

Address _____

_____

Phone No. _____

Today's date _____

****

Part II. On the following questions please circle the number that is most typical of your baby. "About average" means how you think the typical baby would be scored.

1. How easy or difficult is it for you to calm or soothe your baby when he/she is upset?

1	2	3	4	5	6	7
very easy			about average			difficult

2. How easy or difficult is it for you to predict when your baby will go to sleep and wake up?

1	2	3	4	5	6	7
very easy			about average			difficult

3. How easy or difficult is it for you to predict when your baby will become hungry?

1	2	3	4	5	6	7
very easy			about average			difficult

4. How easy or difficult is it for you to know what's bothering your baby when he/she cries or fusses?

1	2	3	4	5	6	7
very easy.			about average			difficult

5. How many times per day, on the average, does your baby get fussy and irritable—for either short or long periods of time?

1	2	3	4	5	6	7
never	1-2 times per day	3-4 times per day	5-6 times per day	7-9 times per day	10-14 times per day	more than 15

6. How much does your baby cry and fuss in general?

1	2	3	4	5	6	7
very little; much less than the average baby			average amount; about as much as the average baby			a lot; much more than the average baby

APPENDIX B.2 (CONT)

7. How did your baby respond to his/her first bath?

1	2	3	4	5	6	7
very well-- baby loved it			neither liked nor disliked it			terribly-- didn't like it

8. How did your baby respond to his/her first solid food?

1	2	3	4	5	6	7
very favorably-- liked it immediately			neither liked nor disliked it			very negatively-- did not like it at all

9. How does your baby typically respond to a new person?

1	2	3	4	5	6	7
almost always responds favorably			responds favorably about half the time			almost always responds negatively at first

10. How does your baby typically respond to being in a new place?

1	2	3	4	5	6	7
almost always responds favorably			responds favorably about half the time			almost always responds negatively at first

11. How well does your baby adapt to things (such as in items 7-10) eventually?

1	2	3	4	5	6	7
very well, always likes it eventually			ends up liking it about half the time			almost always dislikes it in the end

12. How easily does your infant get upset?

1	2	3	4	5	6	7
very hard to upset--even by things that upset most babies			about average			very easily upset by things that wouldn't bother most babies

13. When your baby gets upset (e.g., before feeding, during diapering, etc.) how vigorously or loudly does he/she cry and fuss?

1	2	3	4	5	6	7
very mild intensity or loudness			moderate intensity or loudness			very loud or intense, really cuts loose

14. How does your baby react when you are dressing him/her?

1	2	3	4	5	6	7
very well-- likes it			about average-- doesn't mind it			doesn't like it at all

APPENDIX B.2 (CONT)

15. How active is your baby in general?

1	2	3	4	5	6	7
very calm and quiet			average			very active and vigorous

16. How much does your baby smile and make happy sounds?

1	2	3	4	5	6	7
a great deal, much more than most infants			an average amount			very little, much less than most infants

17. What kind of mood is your baby generally in?

1	2	3	4	5	6	7
very happy and cheerful			neither serious nor cheerful			serious

18. How much does your baby enjoy playing little games with you?

1	2	3	4	5	6	7
a great deal, really loves it			about average			very little, doesn't like it very much

19. How much does your baby want to be held?

1	2	3	4	5	6	7
wants to be free most of the time			sometimes wants to be held; sometimes not			a great deal—wants to be held almost all the time

20. How does your baby respond to disruptions and changes in the everyday routine, such as when you go to church or a meeting, on trips, etc.?

1	2	3	4	5	6	7
very favorably doesn't get upset			about average			very unfavorably gets quite upset

21. How easy is it for you to predict when your baby will need a diaper change?

1	2	3	4	5	6	7
very easy			about average			very difficult

22. How changeable is your baby's mood?

1	2	3	4	5	6	7
changes seldom, and changes slowly when he/she does change			about average			changes often and rapidly

23. How excited does your baby become when people play with or talk to him/her?

1	2	3	4	5	6	7
very excited			about average			not at all

APPENDIX B.2 (CONT)

24. Please rate the overall degree of difficulty your baby would present for the average mother.

1	2	3	4	5	6	7
super easy			ordinary, some problems			highly difficult to deal with

APPENDIX B.3

The Bus Story Test

The Bus Story

Page 1

Once upon a time there was a very naughty bus.

While his driver was trying to mend him, the bus decided to run away.

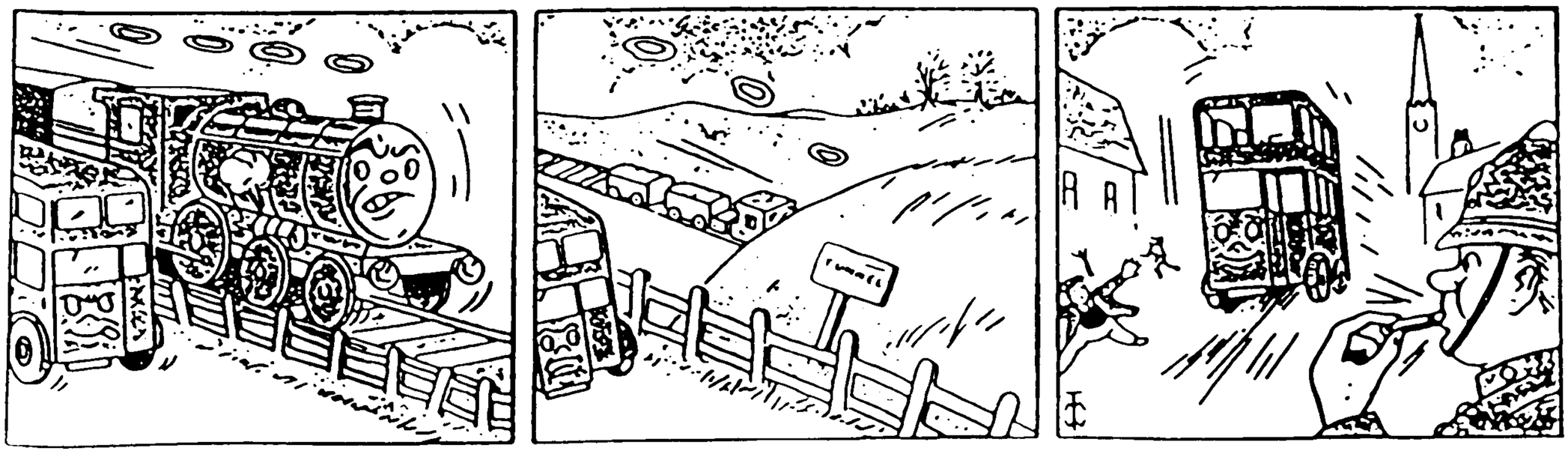
Page 2

He ran along the road beside a train.

They made funny faces at each other and raced each other.

But the bus had to go on alone, because the train went into a tunnel.

He hurried into the city where he met a policeman who blew his whistle and shouted, "Stop, bus".



APPENDIX B.3 (CONT)

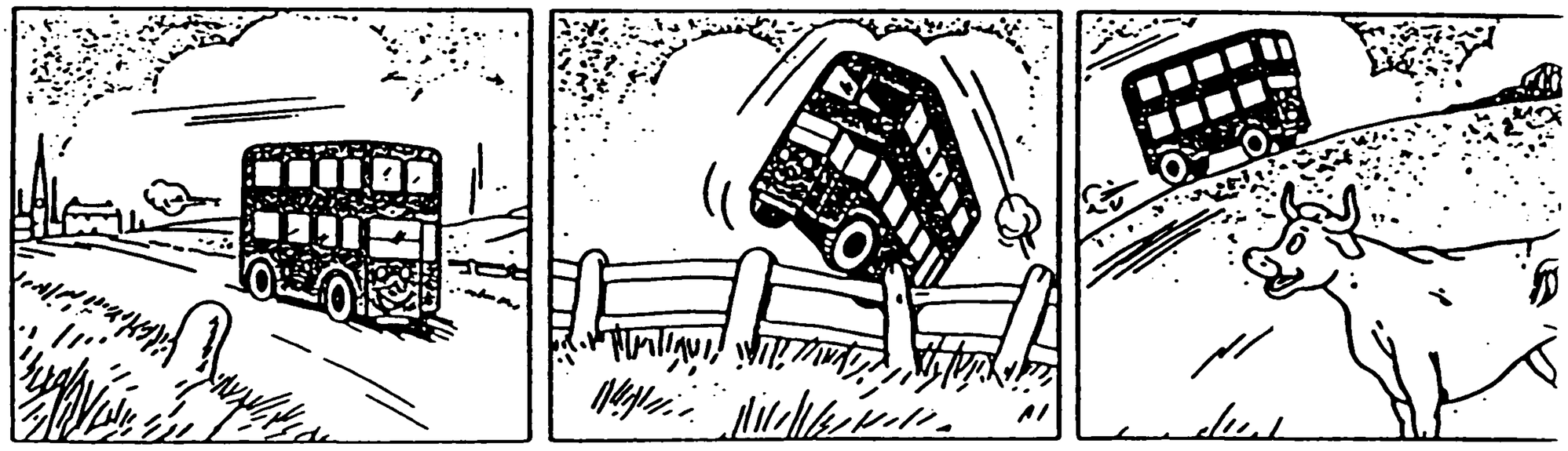
Page 3

But the naughty bus paid no attention and ran on into the country.

He said, "I'm tired of going on the road".

So he jumped over a feuce.

He met a cow who said, "Moo, I can't believe my eyes".



Page 4

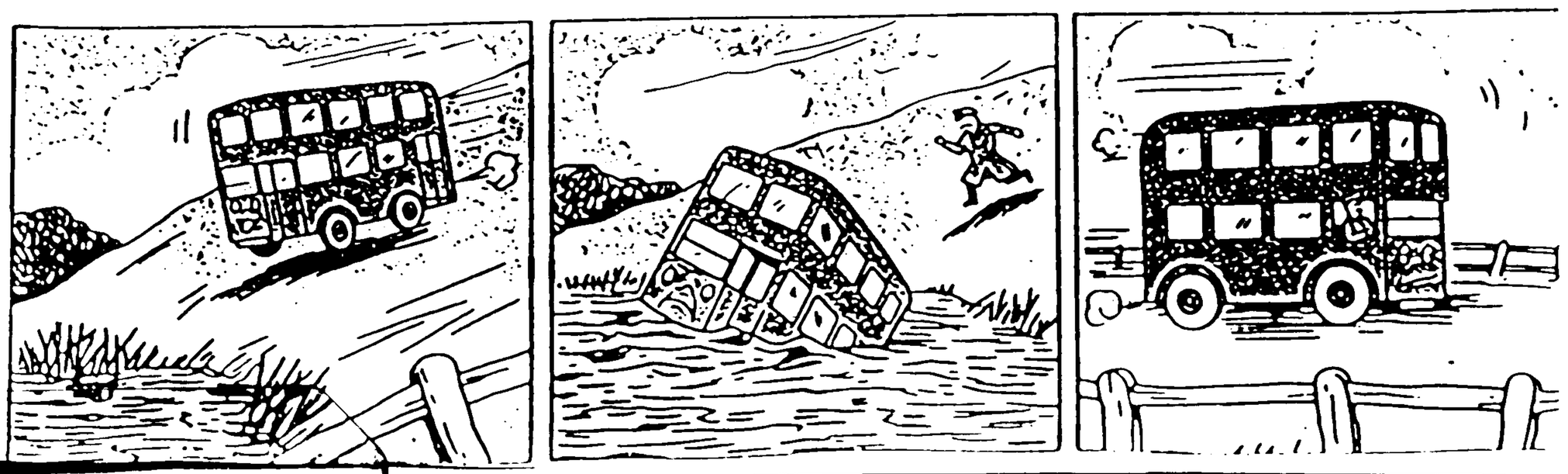
The bus raced down the hill.

As soon as he saw there was water at the bottom, he tried to stop.

But he didn't know how to put on his brakes.

So he fell in the pond with a splash and stuck in the mud.

When the driver found where he was, he telephoned for a crane to pull him out and put him back on the road again.



APPENDIX C

Child Behaviour Checklist

Below is a list of items that describe children. For each item that describes your child now or within the past 6 months, ple
Circle the 2 if the item is very true or often true of your child. Circle the 1 if the item is somewhat or sometimes true of y
child. If the item is not true of your child, circle the 0. Please answer all items as well as you can, even if some do not se
to apply to your child.

0 = Not True (as far as you know) 1 = Somewhat or Sometimes True 2 = Very True or Often T

0	1	2	1. Acts too young for his/her age
0	1	2	2. Allergy (describe): _____
			_____
0	1	2	3. Argues a lot
0	1	2	4. Asthma
0	1	2	5. Behaves like opposite sex
0	1	2	6. Bowel movements outside toilet
0	1	2	7. Bragging, boasting
0	1	2	8. Can't concentrate, can't pay attention for long
0	1	2	9. Can't get his/her mind off certain thoughts; obsessions (describe): _____
			_____
0	1	2	10. Can't sit still, restless, or hyperactive
0	1	2	11. Clings to adults or too dependent
0	1	2	12. Complains of loneliness
0	1	2	13. Confused or seems to be in a fog
0	1	2	14. Cries a lot
0	1	2	15. Cruel to animals
0	1	2	16. Cruelty, bullying, or meanness to others
0	1	2	17. Day-dreams or gets lost in his/her thoughts
0	1	2	18. Deliberately harms self or attempts suicide
0	1	2	19. Demands a lot of attention
0	1	2	20. Destroys his/her own things
0	1	2	21. Destroys things belonging to his/her family or other children
0	1	2	22. Disobedient at home
0	1	2	23. Disobedient at school
0	1	2	24. Doesn't eat well
0	1	2	25. Doesn't get along with other children
0	1	2	26. Doesn't seem to feel guilty after misbehaving
0	1	2	27. Easily jealous
0	1	2	28. Eats or drinks things that are not food – don't include sweets (describe): _____
			_____
0	1	2	29. Fears certain animals, situations, or places, other than school (describe): _____
0	1	2	31. Fears he/she might think or do something bad
0	1	2	32. Feels he/she has to be perfect
0	1	2	33. Feels or complains that no one loves him
0	1	2	34. Feels others are out to get him/her
0	1	2	35. Feels worthless or inferior
0	1	2	36. Gets hurt a lot, accident-prone
0	1	2	37. Gets in many fights
0	1	2	38. Gets teased a lot
0	1	2	39. Hangs around with children who get in trouble
0	1	2	40. Hears sounds or voices that aren't the (describe): _____
			_____
0	1	2	41. Impulsive or acts without thinking
0	1	2	42. Likes to be alone
0	1	2	43. Lying or cheating
0	1	2	44. Bites fingernails
0	1	2	45. Nervous, highstrung, or tense
0	1	2	46. Nervous movements or twitching (des
			_____
0	1	2	47. Nightmares
0	1	2	48. Not liked by other children
0	1	2	49. Constipated, doesn't move bowels
0	1	2	50. Too fearful or anxious
0	1	2	51. Feels dizzy
0	1	2	52. Feels too guilty
0	1	2	53. Overeating
0	1	2	54. Overtired
0	1	2	55. Overweight
			56. Physical problems without known r cause:
0	1	2	a. Aches or pains
0	1	2	b. Headaches
0	1	2	c. Nausea, feels sick
0	1	2	d. Problems with eyes (describe)
			_____
0	1	2	e. Rashes or other skin problems
0	1	2	f. Stomachaches or cramps
0	1	2	g. Vomiting, throwing up
0	1	2	h. Other (describe)

APPENDIX C (CONT)

1 2 57. Physically attacks people
1 2 58. Picks nose, skin, or other parts of body (describe): _____

1 2 59. Plays with own sex parts in public
1 2 60. Plays with own sex parts too much

1 2 61. Poor school work
1 2 62. Poorly coordinated or clumsy

1 2 63. Prefers playing with older children
1 2 64. Prefers playing with younger children

1 2 65. Refuses to talk
1 2 66. Repeats certain acts over and over, compulsions (describe): _____

1 2 67. Runs away from home
1 2 68. Screams a lot

1 2 69. Secretive, keeps things to self
1 2 70. Sees things that aren't there (describe): _____

1 2 71. Self-conscious or easily embarrassed
1 2 72. Sets fires

1 2 73. Sexual problems (describe): _____

1 2 74. Showing off or clowning

1 2 75. Shy or timid
1 2 76. Sleeps less than most children

1 2 77. Sleeps more than most children during day and/or night (describe): _____

1 2 78. Smears or plays with bowel movements

1 2 79. Speech problem (describe): _____

1 2 80. Stares blankly

1 2 81. Steals at home
1 2 82. Steals outside the home

1 2 83. Stores up things he/she doesn't need

0 1 2 84. Strange behavior (describe): _____

0 1 2 85. Strange ideas (describe): _____

0 1 2 86. Stubborn, sullen, or irritable

0 1 2 87. Sudden changes in mood or feelings
0 1 2 88. Sulks a lot

0 1 2 89. Suspicious
0 1 2 90. Swearing or obscene language

0 1 2 91. Talks about killing self
0 1 2 92. Talks or walks in sleep (describe): _____

0 1 2 93. Talks too much
0 1 2 94. Teases a lot

0 1 2 95. Temper tantrums or hot temper
0 1 2 96. Thinks about sex too much

0 1 2 97. Threatens people
0 1 2 98. Thumb-sucking

0 1 2 99. Too concerned with neatness or clear
0 1 2 100. Trouble sleeping (describe): _____

0 1 2 101. Truancy, skips school
0 1 2 102. Underactive, slow moving, or lacks er

0 1 2 103. Unhappy, sad, or depressed
0 1 2 104. Unusually loud

0 1 2 105. Uses alcohol or drugs for nonmedic. purposes (describe): _____

0 1 2 106. Vandalism

0 1 2 107. Wets self during the day
0 1 2 108. Wets the bed

0 1 2 109. Whining
0 1 2 110. Wishes to be of opposite sex

0 1 2 111. Withdrawn, doesn't get involved with
0 1 2 112. Worrying

113. Please write in any problems your ch that were not listed above:

0 1 2 _____

0 1 2 _____

APPENDIX D.1

AAI Questions

p 55

1. Oriented re family, where you lived, moved much, what family did for living?---- Grandparents seen much, or died when parents young--know much about grandparent who died before your birth?--- Other persons in household? --- Sibs nearby? (Keep short/demographic, no more than 2 or 3 minutes).
2. I'd like you to try to describe your relationship with your parents as a young child...if you could start as far back as you remember?
3. Five adjectives describing relationship with mother, as early as you can remember but about 5-12 is fine (write down adjectives). Probe each in sequence given, asking for memories, incidents for each. When one specific incident is given, briefly seek a second. When another adjective is used for a first adjective, repeat query with reference to original adjective. When general or scripted memories are given, give a final probe for a more specific memory. Whenever a specific incident is given, however, enquire briefly for a second incident.
4. Five adjectives father. As above.
5. To which parent closest, and why? Why not same feeling with other parent?
6. When upset as a child, what do? Pause. (a) Upset emotionally? --incidents? (b) Physically hurt--incidents? (c) When ill--what would happen?
7. First separation? How did you respond? How did parents respond? Other separations that stand out?
8. Felt rejected as a child? How old? What did you do? Why parent did these things? Realize he/she was rejecting you?

   8a. Were you ever frightened or worried as a child?
9. Parents ever threatening--for discipline, jokingly? (Elective per researcher: Select one specific form of punishment used in researcher's community--ever happened to you?). Some people have memories of some kind of abuse in family--happen to you or in your family? ---what exactly happened, describe--how old, how severe, how frequent? ---this experience affect you as adult? --affect approach to child?
10. In general, how do you think your overall experiences have affected your adult personality? Any aspects of early experiences you consider a set-back to your development?
11. Why do you think your parents behaved as they did, during childhood?
12. Other adults close like parents as a child? Or other adults especially important though not parental? (Your age at time--did they live in household?--had caregiving responsibilities?--why important?).
13. Loss of parent, other close loved one (sibs) as child? ---circumstances? ---age? ---how respond at time? ---sudden or expected? ---recall how felt at time? ---feelings changed over time? ---attend funeral? ---what was it like? (If parent or sib lost, effect on remaining parent and on household?)---effect of this loss on adult personality? ---on approach to own child?

    13a. Other losses in childhood. Queries as above

    13b. Important losses in adulthood. Queries as above.
14. Ever had any other experiences you regard as potentially traumatic?--after participant interprets for himself or herself, make clear you mean rare overwhelmingly and immediately terrifying events--probe using best judgment. Elective per researcher.
15. Were there many changes in your relationship with parents between childhood and adulthood?
16. What is relationship with parents like for you currently as an adult? much contact with parents at present? what is relationship like currently? current sources of dissatisfaction? of satisfaction?
17. Feel now when separate from child? (or imaginary one year old child)---after sufficient time has passed for subject to describe response, add Do you ever feel worried about (imagined) child?
18. If 3 wishes for child 20 years from now, what? Thinking of kind of future you'd like to see for child. Minute or two to think.
19. Any one thing learned from own childhood experience? I'm thinking here of something you feel you might have gained from the kind of childhood you had

APPENDIX D.2

Table 1: Means and SDS of the four story stem factors grouped by four-way classification of mother's adult attachment interview.

Factor	**Means (SD)**				**df**	**f-ratio**	**f-prob**
	dismissing (n=20)	**autonomous** (n=50)	**preoccupied** (n=12)	**unresolved** (n=7)			
Open/positive response	1.7503 (.20)	1.8000 (.25)	1.6856 (.35)	1.8333 (.11)	3,85	.84	.47
Discipline/punishment	.1402 (.07)	.1847 (.10)	.1295 (.06)	.1580 (.10)	3,82	1.64	.18
Controlling/negative	.5650 (.24)	.5118 (.17)	.5890 (.15)	.6133 (.21)	3,85	1.03	.38
Positive maternal representation	.1295 (.11)	.1203 (.12)	.1364 (.11)	.1169 (.11)	3,82	.07	.97

Note: p values are based on two-tailed levels of significance

Table 2 : Means and SDS of the four story stem factors grouped by four-way classification of father's adult attachment interview.

Factor	**Means (SD)**				**df**	**f-ratio**	**f-prob**
	dismissing (n=18)	**autonomous** (n=57)	**preoccupied** (n=10)	**unresolved** (n=3)			
Quality/Open response	1.6594 (.35)	1.7999 (.22)	1.8253 (.15)	1.8771 (.13)	3,84	1.76	.16
Discipline/punishment	.1828 (.10)	.1553 (.08)	.2030 (.13)	.1515 (.12)	3,81	.89	.44
Controlling/negative	.5703 (.21)	.5416 (.19)	.5121 (.19)	.4970 (.21)	3,84	.24	.86
Positive maternal representation	.1591 (.13)	.1274 (.11)	.0864 (.08)	.0303 (.02)	3,81	1.14	.23

APPENDIX E.1

Table 1: Means and SDS of two-way interaction of gender and insecure vs secure attachment classification with mother at 12 months for the performance variables.

Variables	**Means (SDS)**				**F-value (df)**	**p**
	insecure		**secure**			
	girls (n= 17)	boys (n= 21)	girls (n= 23)	boys (n= 27)		
Role of parent	1.7861 (.39)	1.6147 (.52)	1.8498 (.38)	1.8855 (.45)	1.15 (1,87)	.28
Child's understanding of conflict	1.0428 (.14)	1.0260 (.16)	1.0830 (.09)	1.0404 (.19)	.14 (1,87)	.70
Directness of performance style	1.8610 (.26)	1.7619 (.40)	1.9763 (.05)	1.9428 (.20)	.34 (1,87)	.55
Responsivity to examiner	2.5615 (.55)	2.6320 (.50)	2.8221 (.29)	2.7643 (.44)	.43 (1,87)	.51
Involvement of examiner	1.4652 (.33)	1.4675 (.29)	1.4032 (.23)	1.4444 (.29)	.09 (1,87)	.75
Investment in performance	2.1872 (.80)	2.1558 (.67)	2.2055 (.64)	2.2189 (.68)	.02 (1,87)	.88
Denial	.2620 (.18)	.3463 (.20)	.2490 (.15)	.2694 (.13)	.76 (1,87)	.38
Adaptiveness of response	1.7540 (.43)	1.4935 (.27)	1.9012 (.42)	1.6768 (.33)	.05 (1,87)	.82
Narrative coherence	2.6203 (.50)	2.5931 (.55)	2.8340 (.46)	2.6902 (.55)	.26 (1,87)	.60
Control	.1408 (.20)	.1833 (.30)	.0540 (.13)	.0853 (.13)	.01 (1,87)	.89
Joy	.4403 (.26)	.4906 (.22)	.5468 (.25)	.5230 (.25)	.46 (1,87)	.49
Anger	.0606 (.08)	.0476 (.05)	.0817 (.05)	.0404 (.04)	1.29 (1,87)	.25
Distress	.0196 (.01)	.0202 (.03)	.0316 (.04)	.0258 (.03)	.12 (1,87)	.72
Concern	.0553 (.10)	.0332 (.03)	.0382 (.04)	.0494 (.06)	1.33 (1,87)	.25
Anxiety	.6328 (.27)	.5859 (.32)	.6219 (.26)	.5556 (.26)	.02 (1,87)	.87

APPENDIX F.1

Coding sheet for predicting which attachment classification will score high vs low (present or absent) for each variable

Content Variables

VARIABLE		SJ	MH	3C	BH	LK	SS	SN	RN	BS	EX	BT
aff	h l											
comply	h l											
dishon	h l											
guilt/repar	h l											
icr	h l											
inj	h l											
ncomp	h l											
negatyp	h l											
oexcl	h l											
phy agg	h l											
p empathy	h l											
posatyp	h l											
phy pun	h l											
p repair	h l											
self exclude	h l											
shame other	h l											
v pun	h l											

APPENDIX G.1 (cont)

Parental Representation variables

VARIABLE		SJ	MH	3C	BH	LK	SS	SN	RN	BS	EX	BT
disc f	h l											
disc m	h l											
neg f	h l											
neg m	h l											
pos f	h l											
pos m	h l											

Performance code variables

VARIABLE		SJ	MH	3C	BH	LK	SS	SN	RN	BS	EX	BT
adr	h l											
cuc	h l											
di	h l											
dnl	h l											
ie	h l											
ip	h l											
nc	h l											
res	h l											
rp	h l											

APPENDIX G.1 (cont)

Affect variables

VARIABLE		SJ	MH	3C	BH	LK	SS	SN	RN	BS	EX	BT
pang	h l											
nang	h l											
tang	h l											
panx	h l											
nanx	h l											
tanx	h l											
pcrn	h l											
ncrn	h l											
tcrn	h l											
pctr	h l											
nctr	h l											
tctr	h l											
pdis	h l											
ndis	h l											
tdis	h l											
pjoy	h l											
njoy	h l											
tjoy	h l											

Secure - B **Avoidant - A**
Resistant - C **Disorganised - D**

APPENDIX G.1

Discriminant function analysis

Predicting groups by infant security with mother, using the four factor scales and the discriminating variable of father's social class.

Canonical discriminant functions evaluated at group means (group centroids)

Group	Func 1
1	-.47761
2	.34826

Classification results -

Actual Group	No. of Cases	Predicted Group Membership 1	2
Group 1	36	15 41.7%	21 58.3%
Group 2	49	15 30.6%	34 69.4%
Ungrouped cases	1	0 .0%	1 100.0%

Percent of "grouped" cases correctly classified: 57.65%

Classification processing summary

106 (Unweighted) cases were processed.
0 cases were excluded for missing or out-of-range group codes.
20 cases had at least one missing discriminating variable.
86 (Unweighted) cases were used for printed output.

APPENDIX G.1

Predicting groups by infant security with mother, using the four factor scales calculated per story and the discriminating variable of father's social class.

Canonical discriminant functions evaluated at group means (group centroids)

Group	Func 1
1	-.44080
2	.32142

Classification results -

Actual Group	No. of Cases	Predicted Group Membership 1	2
Group 1	38	17 44.7%	21 55.3%
Group 2	50	10 20.0%	40 80.0%
Ungrouped cases	1	0 .0%	1 100.0%

Percent of "grouped" cases correctly classified: 64.77%

Classification processing summary

106 (Unweighted) cases were processed.
0 cases were excluded for missing or out-of-range group codes.
17 cases had at least one missing discriminating variable.
89 (Unweighted) cases were used for printed output.

APPENDIX G.1

Predicting groups by infant security with father, using the four factor scales calculated per story and the discriminating variable of father's social class.

Canonical discriminant functions evaluated at group means (group centroids)

Group	Func 1
1	.37419
2	-.14700

Classification results -

Actual Group	No. of Cases	Predicted Group Membership 1	2
Group 1	25	0 .0%	25 100.0%
Group 2	63	0 .0%	63 100.0%
Ungrouped cases	11	0 .0%	11 100.0%

Percent of "grouped" cases correctly classified: 71.59%

Classification processing summary

106 (Unweighted) cases were processed.
0 cases were excluded for missing or out-of-range group codes.
7 cases had at least one missing discriminating variable.
99 (Unweighted) cases were used for printed output.

APPENDIX G.1

Predicting groups by maternal security of attachment, using the four factor scales and the discriminating variable of father's social class.

Canonical discriminant functions evaluated at group means (group centroids)

Group	Func 1
1	-.30342
2	.20633

Classification results -

Actual Group		No. of Cases	Predicted Group Membership 1	2
Group	1	35	9	26
			25.7%	74.3%
Group	2	51	9	42
			17.6%	82.4%

Percent of "grouped" cases correctly classified: 59.30%

Classification processing summary

106 (Unweighted) cases were processed.
0 cases were excluded for missing or out-of-range group codes.
20 cases had at least one missing discriminating variable.
86 (Unweighted) cases were used for printed output.

APPENDIX G.1

Predicting groups by maternal security of attachment, using the four factor scales calculated per story and the discriminating variable of father's social class.

Canonical discriminant functions evaluated at group means (group centroids)

Group	Func 1
1	-.55659
2	.37848

Classification results -

Actual Group		No. of Cases	Predicted Group Membership 1	2
Group	1	35	15 42.9%	20 57.1%
Group	2	51	6 11.8%	45 88.2%

Percent of "grouped" cases correctly classified: 69.77%

Classification processing summary

106 (Unweighted) cases were processed.
0 cases were excluded for missing or out-of-range group codes.
20 cases had at least one missing discriminating variable.
86 (Unweighted) cases were used for printed output.

APPENDIX G.1

Predicting groups by paternal security of attachment, using the four factor scales calculated per story and the discriminating variable of father's social class.

Canonical discriminant functions evaluated at group means (group centroids)

Group	Func 1
1	.32077
2	-.15466

Classification results -

Actual Group	No. of Cases	Predicted Group Membership 1	2
Group 1	27	2	25
		7.4%	92.6%
Group 2	58	2	56
		3.4%	96.6%
Ungrouped cases	1	0	1
		.0%	100.0%

Percent of "grouped" cases correctly classified: 68.24%

Classification processing summary

106 (Unweighted) cases were processed.
0 cases were excluded for missing or out-of-range group codes.
20 cases had at least one missing discriminating variable.
86 (Unweighted) cases were used for printed output.

APPENDIX G.2

Cluster analysis using the four factors (Quality/Open Response, Discipline/Punishment, Controlling/Negative and Positive Maternal Representation) as selected characteristics.